

# A revision of *Clematis* sect. *Clematis* (Ranunculaceae)

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**Abstract** *Clematis* sect. *Clematis* is revised in this paper. Seventy-three species and 45 varieties are recognized. They are keyed, described, and illustrated in some cases, and are classified into five subsections. Brief taxonomic history and geographical distribution of the section are given, and the relationships of its subsections and with its close allies of the *C. vitalba* evolutionary stock of the subgenus *Clematis* are discussed. Main taxonomic changes are made as follows: (1) *C. lancifolia* Bur. & Franch., *C. songarica* Bunge, *C. ispananica* Boiss., *C. delavayi* Franch. and *C. phlebantha* Williams, which have been previously regarded to be close to *C. fruticosa* Turcz. and its allies, and placed in sect. *Fruticella* Tamura by Tamura and some other authors, are here transferred to subsect. *Angustifoliae* Tamura according to the floral structure. (2) The existence of intermediate forms between the *C. vitalba* group and the *C. flammula* group indicates that these two groups are closely related to each other and should not be treated as two sections or even two subgenera. They are treated as two subsections within sect. *Clematis*. Two series, six species, and one variety are described as new, and five new ranks are made.

**Key words** *Clematis*, sect. *Clematis*, taxonomic revision.

## 1 Brief taxonomic history

In his revision of the genus *Clematis* L., de Candolle (1818) classified 84 species then known to him into four sections. The section *Flammula* DC. comprises not only species of the *C. vitalba* group and *C. flammula* group but also species of sections *Aspidanthera* Spach, *Meclatis* (Spach) Tamura, *Naraveliopsis* Hand.-Mazz., *Tubulosae* Decne., *Viorna* (Reichb.) Prantl, and *Pseudanemone* Prantl. So, sect. *Flammula* founded by de Candolle is a jumble, heterogeneous group.

The genus *Clematis* defined by Spach (1839) consists of only three sections, i.e. *Vitalba*, *Flammula*, and *Aspidanthera*. The *C. vitalba* group and the *C. flammula* group were discerned by him for the first time.

In the classification of the *Clematis* proposed by Prantl (1888), sect. *Flammula* consists of four subsections. Of them, subsect. *Rectae*, which mainly includes species of the *C. flammula* group, is characterized by having anthers several times longer than broad, and subsect. *Vitalbae*, which includes species of the *C. vitalba* group and *C. dioica* group, is characterized by having anthers at most two times longer than broad. Prantl's treatment of the *C. vitalba* group and *C. flammula* group was later adopted by Schneider (1906), Rehder & Wilson (1913), Handel-Mazzetti (1939), and Rehder (1940).

Since the 1950s, Tamura has been engaged in the systematic study of the genus *Clematis*, and published a series of important papers. In 1967, he made a comprehensive classification of

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*Clematis* but this classification is still within Prantl's classification frame. In this classification, sect. *Clematis* consists of seven subsections: *Pierotiana*, *Vitalbae*, *Aristatae*, *Papuasicae*, *Cras-sifoliae*, *Rectae*, and *Angustifoliae*, with the bisexual subsections distinguished from each other mainly by anther morphology. Twenty years later, Tamura (1987) revised his classification, and made some significant changes. In his new classification, mainly on the basis of the phyllotaxy of seedling leaves, *C. vitalba* group and *C. flammula* group were treated as two subgenera. Subgen. *Clematis* with alternate seedling leaves consists of five sections: *Clematis*, *Cheiropsis*, *Lasiantha*, *Aspidanthera*, and *Naraveliopsis*, and subgen. *Flammula* with opposite seedling leaves consists of four sections: *Flammula*, *Pterocarpa*, *Viticella*, and *Fruticella*. This new treatment was followed by Snoeijer (1992) and Grey-Wilson (2000) with some modifications. Grey-Wilson extracted sect. *Cheiropsis* from subgen. *Clematis*, and elevated it to subgeneric rank, and placed subgen. *Clematis* and subgen. *Cheiropsis* before those subgenera with hairy stamens, e.g. the *C. connata* group and *C. viorna* group, instead after them as Tamura had done. Here I would like to point out that after realizing in 1998 that in the *Clematis* the groups with ascending or erect sepals and hairy stamens are advanced, I had placed sect. *Clematis* and sect. *Cheiropsis*, which possess spreading sepals and glabrous stamens, at the beginning of the systematic sequence of the Chinese *Clematis* (Wang, 1998).

In his monograph of the *Clematis*, Johnson (1997) did not adopt Tamura's treatment of subgeneric division, but accepted the main contents of sect. *Clematis* and sect. *Flammula* sensu Tamura, though with some additions. Under sect. *Clematis*, he founded subsect. *Potaninianae*, which consists of two species, *C. potaninii* belonging in fact to sect. *Cheiropsis*, and *C. trichotoma*, a close ally of *C. grandidentata* of the *C. vitalba* group (Wang, 2000a); and he erroneously associated *C. pinnata*, a member of sect. *Tubulosae* (Wang, 2001), with *C. pierotii* and *C. puberula* etc. of the *C. vitalba* group; and he associated *C. sigensis*, an ally of *C. uncinata*, with the *C. brachiata* group (Wang, 2000a). In sect. *Flammula*, he erroneously associated *C. hedsarifolia*, a member of sect. *Naraveliopsis*, with *C. armandii* and *C. meyeniana* etc. (Wang, 2000a). Unfortunately, the misplacement of the species mentioned above was repeated in the recent revision made by Grey-Wilson (2000).

## 2 Relationships of subsections and some taxonomic problems

As in sect. *Cheiropsis*, the primitive group of *Clematis* (Wang, 2000b), the leaflets in subsect. *Clematis* (*C. vitalba* group) are also usually papery or herbaceous, dentate at margin, the stamen filaments are glabrous, smooth, linear or narrowly linear in outline, and the anthers are oblong or narrowly oblong in outline. With these primitive features, subsect. *Clematis* may be regarded as the primitive group of sect. *Clematis*, from which the other four subsections with advanced characters appear to have evolved. However, in *C. mashanensis*, *C. tenuipes*, *C. cinnamomoides*, *C. burmanica*, *C. vaniotii*, *C. tsaii*, *C. gouriana*, *C. subumbellata*, and *C. tamrae*, the leaflets are entire; in *C. peterae*, *C. vitalba*, and *C. puberula*, the leaflets are either entire or dentate; in *C. apiculata* and *C. parviloba* var. *longianthera*, the anthers are linear in outline, and the connectives are slightly projected at apex. In *C. cinnamomoides*, the leaflets are coriaceous and entire, and if its oblong anthers are removed from the flower, this species will certainly be identified as a member of subsect. *Rectae* (see below). In subsect. *Clematis*, the achenes are usually not flattened, and are ovate, elliptic, or lanceolate in outline, not marginate, rarely slightly rimmed, and only in *C. puberula*, they are strongly bilaterally compressed, and flattened, suborbicular in outline, and around the seed peripherally broadly marginate. In the genus

*Clematis*, only two species, *C. puberula* and *C. brachyura* Maxim. (sect. *Pterocarpa*) possess such peculiar achenes.

Like *C. cinnamomoides*, *C. crassifolia*, the only species of the monotypic subsection *Crassifoliae*, also has coriaceous, entire leaflets and broadly oblong or oblong anthers, and in habit resembles the species of subsect. *Rectae*. *C. crassifolia* is characterized by having rugose stamen filaments, by which it can be distinguished from *C. cinnamomoides* and other species of subsect. *Clematis*.

*C. baominiana*, the only species of the monotypic subsection *Baominianae*, which has papery, dentate leaflets and oblong anthers, is closely related to species of subsect. *Clematis*, but differs in its larger, 6-sepalled flowers and sepals covered with hairs 1.6–3 mm long. In subsect. *Clematis*, the flowers are smaller and usually 4-sepalled, and the sepals are covered with shorter hairs less than or up to 1 mm long.

Subsect. *Angustifoliae* is characterized by the erect habit and the (4–)5–6–8-sepalled flowers, and is closely related to subsect. *Clematis*. Five species, *C. lancifolia*, *C. songarica*, *C. ispananica*, *C. delavayi*, and *C. phlebantha*, were previously placed in sect. *Fruticella* by Tamura (1967, 1987, 1995), and his treatment was followed by Chang (1980), Johnson (1997), Wang (1998), and Grey-Wilson (2000). However, their floral structure is similar to that of *C. hexapetala*. In their spreading, white, not dilated sepals and linear stamen filaments they obviously differ from *C. fruticosa*, the nomenclatural type of sect. *Fruticella*, and its allies, in which the sepals are ascending, yellow, and after anthesis dilated at margin, and the stamen filaments are broader, linear-lanceolate in outline. According to these differences the five species are transferred from sect. *Fruticella* to sect. *Clematis* subsect. *Angustifoliae* in the present revision.

Subsect. *Rectae* (*C. flammula* group) is characterized mainly by having usually thicker, subcoriaceous or coriaceous, entire leaflets, linear anthers, and often slightly projected connectives, although there are some exceptions. For example, in *C. thaiana*, *C. zemuensis*, and *C. sichotealinensis*, the leaflets are dentate; in *C. chinensis*, *C. terniflora*, *C. flammula* and *C. recta* etc., the leaflets are papery in texture; and in *C. chekiangensis*, *C. shensiensis*, *C. quinquefoliolata*, *C. dilatata*, and *C. kirilowii*, the anthers are often narrowly oblong in outline. Due to the existence of intermediate forms between subsect. *Clematis* (see above) and subsect. *Rectae*, it is impossible to use any morphological characters to draw a clear-cut line of demarcation between the two groups. As to the phyllotaxy of seedling leaves, it is indeed an important character for elucidation of relationships of taxa and for their classification, but in sect. *Clematis*, the seedling leaves are known only in a few species of three subsections. In subsect. *Clematis*, they are known only in five species, i.e. *C. apiifolia*, *C. peterae*, *C. vitalba*, *C. grata*, and *C. brevicaudata*, in subsect. *Angustifoliae*, only in *C. hexapetala*, and in subsect. *Rectae*, only in *C. meyeniana*, *C. chinensis*, *C. terniflora*, *C. kirilowii*, *C. recta*, and *C. flammula* (Essig, 1991). Under the circumstances that the variation of the seedling leaves is unclear, it seems not appropriate to use this character to establish new sections or even new subgenera. Therefore, in the present revision, I treat the *C. vitalba* group, *C. flammula* group, and the other three small groups as five subsections of sect. *Clematis*.

In ser. *Rectae* of subsect. *Rectae*, the achenes are usually strongly bilaterally compressed, flattened, and tumidly rimmed at margin. In sect. *Viticella* and sect. *Viorna* of the genus *Clematis*, some species also have this peculiar, advanced type of achene, but have tail-like, appressed-puberulous, not plumose persistent styles. Also in this series, there is one of the most variable and polytypic species in the genus *Clematis*, i.e. *C. flammula* (see below). Its advanced variety,

var. *stenophylla*, has curious, advanced type of leaves in the sect. *Clematis*, which is thrice pinnatisect into linear or narrowly linear ultimate lobes 1–2(–4) mm broad. Leaves similar to this advanced type occur independently in several evolutionary lines of the genus *Clematis*, such as *C. brachiata* group (*C. dissecta* Baker), *C. connata* group (*C. aethusifolia* Turcz.), and *C. villosa* group (*C. anethifolia* Hook.).

### 3 Relationships of the groups in the *C. vitalba* evolutionary stock

In subgen. *Clematis*, which is characterized by the valvate aestivation of sepals, there are three evolutionary stocks. The first one is the *C. montana* stock represented by only one section, sect. *Cheiropsis*, which is characterized by having spreading, rarely erect, obovate or narrowed sepals outside on margin usually puberulous or glabrous, and glabrous stamens with linear filaments and oblong or narrowly oblong anthers (Wang, 2000b, 2002). The *C. vitalba* stock stands next to the *C. montana* stock, and differs in its always narrowed, never obovate sepals outside on margin covered with a narrow strip of velutinous indumentum. The third one is the *C. connata* stock which possesses erect or suberect, narrowed sepals outside on margin also covered with a narrow strip of velutinous indumentum, and more or less densely hairy stamens.

In the *C. vitalba* stock, sect. *Clematis* is situated at the basal position, from which the other eight allied groups with more advanced features of the reproductive organs may be derived: Sect. *Aspidanthera* (Tamura, 1995; Wang, 2000b) differs in the unisexual flowers; sect. *Fruticella* in the ascending, yellow, dilated sepals and linear-lanceolate stamen filaments; sect. *Brachiatae* (Snoeijer, 1992) (sect. *Meclatis* subsect. *Wightianae*) in the hairy stamen filaments; sect. *Meclatis* in the usually ascending, yellow, often thicker sepals, and hairy linear-lanceolate stamen filaments; sect. *Naraveliopsis* in the anther connectives with more or less strongly projected appendages; sect. *Pterocarpa* in the flattened, broadly marginate achenes with short, subulate, not plumose persistent styles; sect. *Viticella* in the often larger, strongly dilated sepals, narrowly linear anthers, and pantoporate pollen (Nowicke & Skvarla, 1995; Zhang, 1998); and sect. *Tubulosae* in the ascending or erect sepals, often pilose stamen filaments, pantoporate pollen (Nowicke & Skvarla, 1995; Zhang, 1998), and often unisexual flowers (Fig. 1).

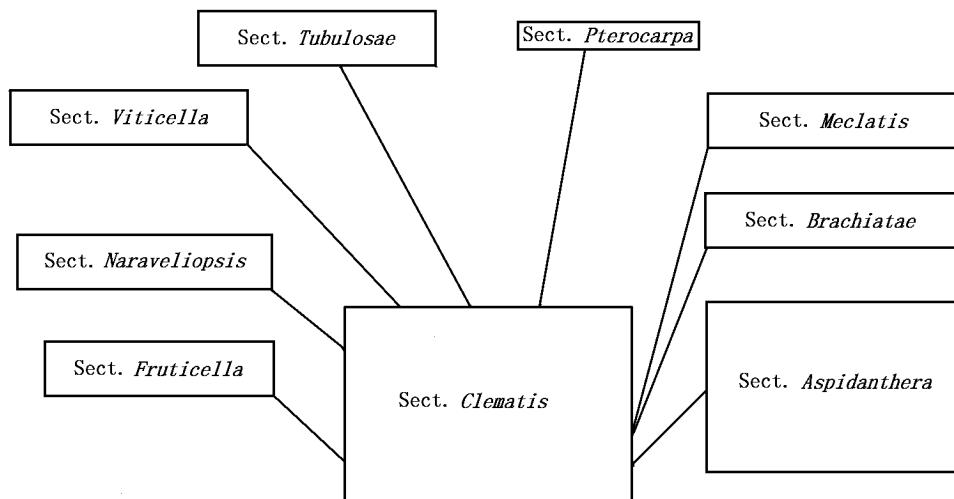


Fig. 1. Diagram showing the putative evolutionary relationships of the groups of the *Clematis vitalba* stock of subgen. *Clematis*.

## 4 Geographical distribution

The section *Clematis* here defined consists of 73 species and 45 varieties, of which 65 species occur in eastern, southern and southeastern Asia, six species in Europe with two extending eastwards to southwestern Asia, and three species in northern and eastern Africa (Fig. 2).

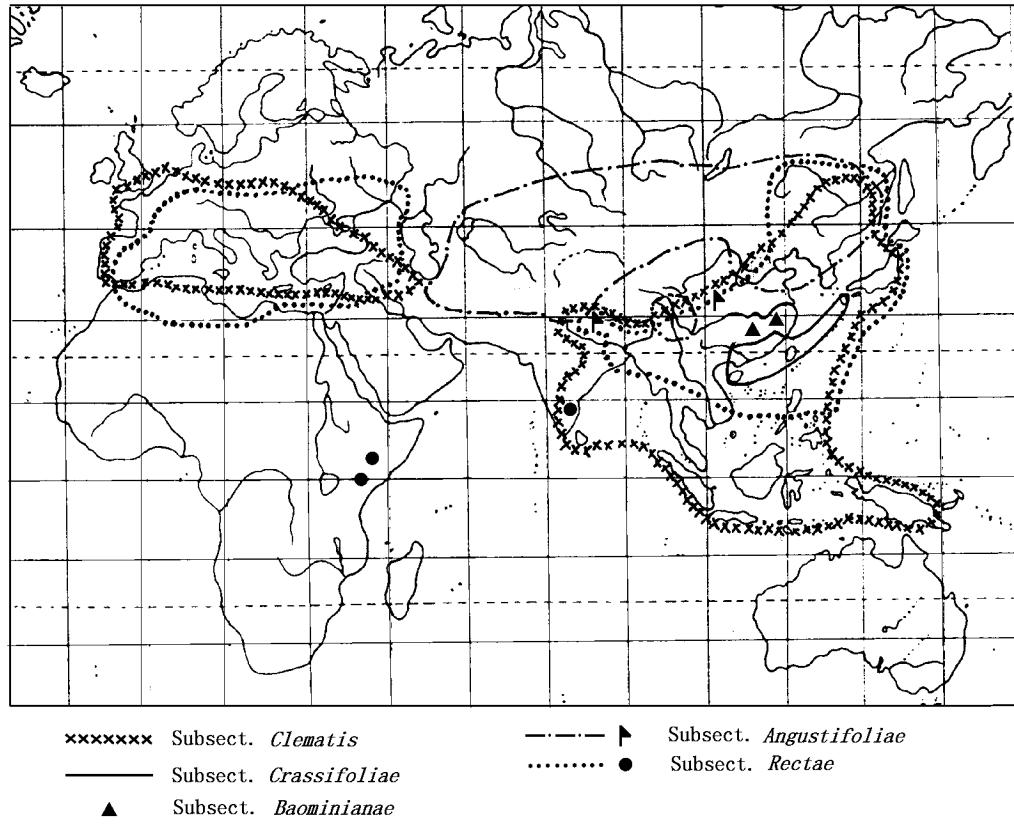


Fig. 2. Map showing distribution of the five subsections of sect. *Clematis*.

In subsect. *Clematis* 30 species and 14 varieties are recognized in the present revision. Of them, 22 species, including 14 endemic to China, occur in the subtropical regions of China, one to four species in Far East Region of Russia, Korea, Japan, the Himalayas, India, and southeastern Asia respectively, and one species (*C. vitalba*) disjunctively in Europe, southwestern Asia, and northern Africa (Hansen, 1992).

The monotypic subsection *Crassifoliae* is distributed in the subtropical and tropical regions of China and Japan.

The monotypic subsection *Baominianae* is endemic to the subtropical regions of northern Hunan Province and southern Anhui Province of China.

The subsection *Angustifoliae* here defined consists of seven species and six varieties, widespread in Siberia, northern Korea, Northeast, North, Northwest and Southwest China, the Himalayas, and the arid regions of Central Asia.

In subsect. *Rectae* here defined 34 species and 25 varieties are recognized. Of them 23 species, including 18 endemic to China, occur in the eastern part of China, one to two species in

Korea, Japan, Vietnam, Thailand, Myanmar, India, and the Himalayas respectively, five species of ser. *Rectae* in Europe and northern Africa, with one species extending eastwards to southwestern Asia, and one species of ser. *Uncinatae* in eastern Africa.

From what mentioned above, we may see that the distribution center of the sect. *Clematis*, just as that of the genus *Clematis* ( Kapoor, 1987 ), is situated in the subtropical regions of China, where 51 species belonging to all five subsections are concentrated, about 70 per cent of the total number of the species of sect. *Clematis*, including 35 endemic species.

## 5 Taxonomic treatment

Sect. **Clematis**. Tamura in Sci. Rep. Osaka Univ. 16(2):33. 1967, p. p. ; M. C. Chang in Fl. Reip. Pop. Sin. 28:156. 1980 ; Tamura in Acta Phytotax. Geobot. 38:40. 1987 ; et in Heipko, Engler's Nat. Pflanzenfam., ed. 2, 17a(4):378. 1995 ; W. T. Wang in Acta Phytotax. Sin. 36(2):154. 1998. Type: *C. vitalba* L.

Sect. *Flammula* DC. Syst. 1:133. 1818, p. p.

Woody vines, seldom small erect shrubs, half-shrubs, or perennial herbs. Seedling leaves alternate or opposite (known from ca. 11 species). Leaves opposite, once or twice ternate or pinnate, seldom simple or thrice pinnatisect. Flowers bisexual, small or medium-sized, rarely large, in 1–many-flowered, bibracteate cymes arising from leaf axils of hornotinous branch, rarely from axillary buds of old branch or solitary and terminal on short hornotinous branches. Sepals 4(–5–8), spreading, white, seldom pink, valvate, oblong, oblanceolate, or lanceolate, puberulous or glabrous, on margin velutinous, seldom on both surfaces entirely hairless. Stamens glabrous; filaments linear or narrowly linear; anthers oblong to linear, at apex obtuse (connective at apex not projected) or minutely apiculate (connective at apex with a small projection about 0.1 mm long). Achenes more or less bilaterally compressed, seldom nearly terete; persistent styles usually strongly elongated and plumose.

Ca. 73 species, wide-spread in Asia, Europe, and N & E Africa

## Key to subsections and series

1. Anthers oblong or narrowly oblong, seldom linear (*C. apiculata*, *C. parviflora* var. *longianthera*, *C. ispanica*), at apex obtuse, seldom minutely apiculate (*C. tenuipes*, *C. apiculata* etc.); leaflets at margin dentate or serrate, or sometimes entire.
2. Woody, rarely herbaceous vines; seedling leaves alternate (known only in five species); flowers in axillary and terminal inflorescences.
  3. Sepals 4 – 5, 5 – 15 – 20 – 26 mm long, with hairs less than or up to 1 mm long.
    4. Filaments not rugose; leaflets dentate or entire at margin ..... Subsect. 1. **Clematis** spp. 1 – 30
    5. Achenes compressed, but neither flattened nor marginate (in *C. apiculata* strongly compressed and in-districtly marginate) ..... Ser. 1. **Clematis** spp. 1 – 29
    5. Achenes strongly compressed, flattened, broadly marginate ..... Ser. 2. **Puberulae** sp. 30
    4. Filaments rugose; leaflets entire ..... Subsect. **Crassifoliae** sp. 31
  3. Sepals 6, larger, 30 mm long, with hairs 1.6 – 3 mm long ..... Subsect. 3. **Baominianae** sp. 32
2. Erect small shrubs, half-shrubs, or perennial herbs; seedling leaves opposite (known only in one species); inflorescences or flowers terminal ..... Subsect. 4. **Angustifoliae** spp. 33 – 39
6. Small shrubs or half-shrubs; leaves simple, pinnatisect, or pinnate, not reticulate; sepals 4 – 7.

7. Flowers in terminal cymes ; lateral basal veins of sepals with a few veinlets externally ..... Ser. 1. **Songaricae** spp. 33–37

7. Flowers solitary on short hornotinous branches ; lateral basal veins of sepals with numerous veinlets externally ..... Ser. 2. **Phlebanthae** sp. 38

6. Perennial herbs ; leaves bipinnatisect with reticulate lobes ; sepals (4–5–6–8) ..... Ser. 3. **Hexapetala** sp. 39

1. Anthers linear, sometimes narrowly oblong (*C. chekiangensis*, *C. finetiana*, *C. quinquefoliolata*, *C. dilatata*, *C. terniflora* var. *garabiensis* etc.), at apex often minutely apiculate ; leaflets at margin usually entire, rarely dentate (*C. thaiana*, *C. zemuensis*, *C. sichotealinensis*) ; seedling leaves opposite (known only in six species) ..... Subsect. 5. **Rectae** spp. 40–73

8. Sepals outside on margin velutinous, elsewhere puberulous or glabrous.

9. Hornotinous branches or cymes not together with leaves arising from axillary buds of old branch ; leaflets usually entire at margin.

10. Inflorescences arising from axils of hornotinous branch.

11. Achenes more or less compressed, ovate, elliptic, or lanceolate in outline.

12. Achenes not flattened, and not tumidly rimmed at margin ... Ser. 1. **Meyeniana** spp. 40–54

12. Achenes strongly compressed, flattened, and tumidly rimmed at margin (in *C. lathyrifolia* narrowly rimmed) ..... Ser. 3. **Rectae** spp. 58–69

11. Achenes less compressed, subulate-terete or narrowly lanceolate ..... Ser. 4. **Uncinatae** spp. 70–71

10. Inflorescences alone arising from axillary buds of old branch ..... Ser. 2. **Armandiana** spp. 55–57

9. Hornotinous branch or sometimes inflorescence with leaves together arising from an axillary bud of old branch ; leaflets incised-dentate at margin ..... Ser. 5. **Zemuenses** sp. 72

8. Sepals on both surfaces entirely hairless ; leaflets often dentate at margin ..... Ser. 6. **Sichotealinenses** sp. 73

Subsect. 1. **Clematis**. Tamura in Acta Phytotax. Geobot. 38: 41. 1987 ; M. Johnson, Clematis 421. 1997 ; W. T. Wang in Acta Phytotax. Sin. 36(2): 154. 1998 ; Grey-Wils., Clematis 34. 2000, p. p. — Sect. *Vitalba* Spach, Hist. Nat. Veg. Phan. 7: 276. 1839, p. p. — Sect. *Clematis* subsect. *Vitalbae* Tamura in Sci. Rep. Osaka Univ. 16(2): 33. 1967 ; Ting in Fl. Reip. Pop. Sin. 28: 178. 1980. Type : *C. vitalba* L.

Woody vines. Seedling leaves alternate (known from *C. apiifolia*, *C. peterae*, *C. vitalba*, *C. grata*, and *C. brevicaudata*). Leaves once to twice ternate or pinnate ; leaflets at margin dentate or serrate, or sometimes entire. Flowers small or medium-sized, in 1–many-flowered cymes arising from leaf axils or apexes of hornotinous branch. Sepals 4(–5), with hairs less than or up to 1 mm long. Filaments not rugose ; anthers oblong or narrowly oblong, seldom linear (*C. apiculata*, *C. parviflora* var. *longianthera*, *C. ispanonica*), at apex obtuse, seldom minutely apiculate (*C. tenuipes* and *C. apiculata* etc.).

Twenty-nine species, wide-spread in Asia and Europe.

### Key to species and varieties

1. Leaves ternate.

2. Sepals inside densely puberulous ; leaflets at margin dentate ; cymes several–many-flowered ; anthers at apex obtuse ..... 2. *C. apiifolia*

3. Leaflets ovate or broadly ovate, 2–8 × 1.6–6 cm, abaxially sparsely puberulous ..... 2a. var. *apiifolia*

3. Leaflets larger, broadly ovate, 2.5–13 × 2.2–9.5 cm, abaxially often densely puberulous or velutinous,

sometimes sparsely puberulous ..... 2b. var. **argentilucida**

2. Sepals inside glabrous ; leaflets at margin entire , only in *C. tinghuensis* often 1 – 2-denticulate.

4. Axillary cymes 1-flowered.

5. Leaflets coriaceous ; bracts foliaceous , ternate ; sepals 22 – 26 mm long ; anthers at apex obtuse or minutely apiculate ..... 3. **C. mashanensis**

5. Leaflets subcoriaceous ; bracts small , simple , linear , 3 – 4 mm long ; sepals smaller , 12 – 15 mm long ; anthers at apex minutely apiculate ..... 4. **C. tenuipes**

4. Axillary cymes 3 – many-flowered ; anthers at apex obtuse.

6. Leaflets coriaceous , adaxially slightly yet abaxially conspicuously reticulate ..... 6. **C. cinnamomoides**

6. Leaflets papery , seldom subcoriaceous , not reticulate or abaxially slightly reticulate( *C. apiculata* ).

7. Persistent styles 6 mm long ; leaflets papery , at margin 1 – 2-denticulate ..... 1. **C. tinghuensis**

7. Persistent styles longer , 1.5 – 5 cm long.

8. Leaflets at margin entire ; anthers oblong or narrowly oblong , at apex obtuse.

9. Perennial herbaceous vine ; leaflets lanceolate , narrowly ovate , or ovate ,( 0.8 – )1 – 2.3 ( – 3.4 ) cm broad ; cymes 3 – 5-flowered ; anthers oblong , 0.8 – 1 mm long ..... 5. **C. formosana**

9. Woody vine ; leaflets ovate , 3.4 – 6 cm broad ; cymes many-flowered ; anthers larger , narrowly oblong or oblong , 1.2 – 1.8 mm long ..... 7. **C. burmanica**

8. Leaflets at margin serrate or dentate ; anthers narrowly oblong or linear , at apex minutely apiculate ..... 8. **C. apiculata**

1. Leaves pinnate , bipinnate or biternate.

10. Leaves pinnate.

11. Sepals inside glabrous.

12. Ovaries and achenes glabrous.

13. Leaflets at margin sparsely denticulate or entire ; axillary cymes usually many-flowered ; sepals 6 – 8 mm long ..... 16a. **C. peterae** var. **peterae**

13. Leaflets at margin coarsely dentate ; axillary cymes 3 – 5-flowered ; sepals larger , 10 – 20 mm long.

14. Axillary cymes ca. 5-flowered ; peduncles and pedicels densely puberulous ; sepals 8 – 13 × 3 – 5 mm ..... 11b. **C. grandidentata** var. **likiangensis**

14. Axillary cymes 3-flowered ; peduncles and pedicels sparsely puberulous ; sepals larger , 10 – 20 × 5 – 8 mm ..... 12. **C. trichotoma**

12. Ovaries and achenes puberulous.

15. Sepals 2 – 2.4 cm long ; anthers linear , 2.8 – 3 mm long ; cymes 1-flowered ..... 26e. **C. parviloba** var. **longianthera**

15. Sepals 0.6 – 1.5 cm long ; anthers narrowly oblong , 1 – 2 mm long ; cymes 3 – many-flowered.

16. Axillary cymes sparsely 3 – 6-flowered , often raceme-like ; sepals 10 – 15 mm long ..... 11a. **C. grandidentata** var. **grandidentata**

16. Axillary cymes more or less many-flowered , panicle-like ; sepals 6 – 10 mm long.

17. Leaflets abaxially densely velutinous ..... 13. **C. pycnocoma**

17. Leaflets abaxially sparsely or densely puberulous.

18. Bracteoles conspicuous , ovate , elliptic , or lanceolate ; leaflets adaxially densely puberulous , at apex long acuminate or acuminate ..... 10. **C. gratopsis**

18. Bracteoles smaller , subulate or linear , or absent.

19. Leaflets 3.5 – 7 cm broad , adaxially strigose.

20. Leaflets at margin dentate ..... 14. **C. chingii**

20. Leaflets at margin entire ..... 15. *C. tsaii*

19. Leaflets narrower, 0.9–4.6 cm broad, adaxially puberulous.

21. Leaflets adaxially sparsely puberulous, at margin entire or sparsely dentate, usually undivided ..... 16b. *C. peterae* var. *trichocarpa*

21. Leaflets adaxially densely puberulous, at margin incised-dentate, often 3-lobed ..... 19. *C. grata*

11. Sepals inside hairy.

22. Sepals inside densely puberulous.

23. Cymes (1–)3-flowered; sepals 10–16 × 4–5.5 mm; anthers oblong or narrowly oblong, 2–2.6 mm long ..... 9. *C. vaniotii*

23. Cymes usually many-flowered; sepals smaller, 8–10 × 1.8–3(–4) mm; anthers narrowly oblong, 1.4–2 mm long ..... 17. *C. vitalba*

24. Leaflets ovate ..... 17a. var. *vitalba*

24. Leaflets lanceolate or lanceolate-linear ..... 17b. var. *angustisecta*

22. Sepals inside sparsely puberulous; cymes many-flowered.

25. Achenes elliptic or ovate.

26. Leaflets papery or herbaceous, adaxially puberulous ..... 19. *C. grata*

26. Leaflets thickly papery, adaxially densely puberulous ..... 21. *C. mollissima*

25. Achenes lanceolate or fusiform.

27. Leaflets at margin entire, seldom 1–2-denticulate, undivided, on both surfaces glabrous or subglabrous, seldom abaxially densely puberulous; sepals 5–6 × 1.8–2 mm ..... 18. *C. gouriana*

28. Leaflets on both surfaces glabrous or only on midrib sparsely puberulous ..... 18a. var. *gouriana*

28. Leaflets abaxially densely appressed-puberulous ..... 18b. var. *mollifolia*

27. Leaflets at margin dentate, seldom entire, undivided or 3-lobed, adaxially puberulous, abaxially densely or sparsely puberulous; sepals larger, 7–11 × 2–4.5(–5) mm ..... 20. *C. javana*

10. Leaves bipinnate or binate.

29. Achenes neither flattened nor broadly marginate.

30. Achenes lanceolate or fusiform.

31. Achenes glabrous, only on top pilose, at margin slightly narrowly rimmed ..... 2c. *C. apiiifolia* var. *bibernata*

31. Achenes densely puberulous, not rimmed at margin.

32. Leaflets subglabrous, at margin entire; sepals 5–6 mm long ..... 17a. *C. gouriana* var. *gouriana*

32. Leaflets on both surfaces usually puberulous, at margin usually dentate; sepals larger, 7–15 mm long.

33. Cymes 9–many-flowered, panicle-like; pedicels 7–18 mm long; sepals inside puberulous, seldom glabrous ..... 20. *C. javana*

33. Cymes 1–5-flowered; pedicels 20–40 cm long; sepals inside glabrous ..... 29. *C. pierotii*

30. Achenes elliptic, ovate, or obovate.

34. Sepals inside glabrous.

35. Leaves at petiole's base having ovate stipules ..... 16c. *C. peterae* var. *lishanensis*

35. Leaves having no stipules.

36. Branches glabrescent ..... 28. *C. taeguensis*

36. Branches more or less puberulous.

37. Leaflets on both surfaces densely puberulous ..... 24. *C. wissmanniana*  
 37. Leaflets adaxially sparsely puberulous, abaxially densely or sparsely appressed-puberulous ..... 26. *C. parviloba*  
 38. Anthers 1 – 1.8 mm long.  
 39. Leaflets at margin entire.  
 40. Sepals lanceolate or oblong-lanceolate, 16 – 20 × 3.5 – 8 mm, at apex attenuate; anthers 1.2 – 1.8 mm long; achenes ovate or narrowly elliptic, ca. 5 × 2.2 – 2.8 mm, indistinctly marginate ..... 26a. var. *parviloba*  
 40. Sepals smaller, obovate-oblong, 10 – 11 × 4 – 5 mm, at apex obtuse; anthers smaller, 1 – 1.2 mm long; achenes rhombic-elliptic, ca. 4 × 2.6 mm, not marginate ..... 26b. var. *rhombico-elliptica*  
 39. Leaflets at margin dentate, seldom entire; sepals elliptic-oblong or narrowly oblong, at apex acute; anthers 1 – 1.6 mm long ..... 26c. var. *bartlettii*  
 38. Anthers 2.2 – 2.5 mm long; leaflets entire; sepals ovate-oblong, at apex obtuse ..... 26d. var. *suboblonga*

34. Sepals inside puberulous.  
 41. Leaflets at margin usually dentate.  
 42. Branches 10 – 12-sulcate; leaves at petiole's base having 2 ovate stipules; leaflets thickly papery; persistent styles 2.7 – 3.2 cm long ..... 22. *C. multistriata*  
 42. Branches 4 – 5-sulcate; leaves having no stipules; leaflets papery; persistent styles 1.2 – 2.6 cm long.  
 43. Branches and abaxial surface of leaflets densely puberulous ..... 19. *C. grata*  
 43. Branches and abaxial surface of leaflets puberulous or subglabrous ..... 23. *C. brevicaudata*

41. Leaflets at margin entire.  
 44. Leaflets 1 – 4.2 cm broad, abaxially densely puberulous; axillary cymes usually many-flowered, panicle-like; sepals 5 – 8 × 1.8 – 3 mm; achenes narrowly lanceolate ..... 25. *C. subumbellata*  
 44. Leaflets (0.8 – ) 1.2 – 1.8 cm broad, abaxially sparsely puberulous; axillary cymes 3 – 9-flowered; sepals larger, 10 – 15 × 4 – 6 mm; achenes elliptic or ovate ..... 27. *C. tamurae*

29. Achenes strongly compressed, flattened, broadly marginate (in var. *subsericea* achenes unknown) ..... 30. *C. puberula*

45. Ovaries and achenes puberulous.  
 46. Sepals outside densely puberulous ..... 30a. var. *puberula*  
 46. Sepals outside sparsely puberulous or subglabrous ..... 30b. var. *tenuisepala*

45. Ovaries and achenes glabrous.  
 47. Leaflets abaxially densely sericeous ..... 30c. var. *subsericea*  
 47. Leaflets abaxially sparsely puberulous or subglabrous ..... 30d. var. *ganpiniana*

Ser. 1. **Clematis.** — Sect. *Vitalbae* Prantl ser. *Euvitalbae* Prantl in Bot. Jahrb. 9 : 260. 1888; Schneid. , Ill. Handb. Laubh. 1 : 290. 1906; Tamura in Sci. Rep. Osaka Univ. 4 : 51. 1955. — Ser. *Vitalbae* Koehne, Deut. Dendr. 152. 1893, p. p. ; Rehd. & Wils. in Sarg. Pl. Wils. 1 : 335. 1913, p. p. ; Rehd. , Man. Cult. Tr. & Shr. , ed. 2, 218. 1940. Type : *C. vitalba* L.

Ser. *Pierotianae* Tamura in Sci. Rep. Osaka Univ. 4 : 52. 1955. — Sect. *Clematis* sub-sect. *Pierotinae* ( Tamura ) Tamura in Sci. Rep. Osaka Univ. 16(2) : 33. 1967; et in Acta Phytotax. Geobot. 38 : 41. 1987; M. Johnson, Klematis 409. 1997; Grey-Wils. , Clematis 43. 2000, p. p. Type : *C. pierottii* Miq.

Achenes compressed, but not flattened, nor indistinctly marginate. Leaves once to twice ternate or pinnate, seldom simple.

Twenty-eight species, with the same distribution as subsect. *Clematis*.

1. ***Clematis tinghuensis*** C. T. Ting in Fl. Reip. Pop. Sin. 28:184, fig. 25. 1980; M. Johnson, Klematis 449. 1997; Grey-Wils., Clematis 43. 2000; W. T. Wang & Barth. in Fl. China 6:346. 2001. Type: China. Guangdong: Gaoyao (高要), Dinghushan (鼎湖山), 1957-06-04, K. L. Shih 462 (holotype, IBSC!); same locality, 1964-06-24, K. C. Ting & K. L. Shih 1589 (paratype, IBSC!); same locality, 1965-07-07, K. L. Shih & S. T. Huang 2514 (paratype, IBSC!).

鼎湖铁线莲 Fig. 3: F – H

Woody vine. Branches shallowly ca. 6-sulcate, sparsely puberulous. Leaves ternate, uppermost ones sometimes simple; leaflets papery, ovate or broadly ovate, 2–8 × 1–5 cm, at apex acuminate, at base subcordate, truncate, or rounded, at margin 1–2-denticulate or entire, adaxially only on basal veins minutely puberulous, abaxially sparsely appressed-puberulous, basal veins nearly flat; petioles 1.2–4 cm long, sparsely puberulous. Cymes axillary and terminal, 3–7-flowered; peduncles 3.5–6 cm long, sparsely puberulous; bracts petiolate, ovate, 0.7–2 cm long. Flower ca. 2 cm in diam.; pedicel 0.6–1.8 cm long, puberulous. Sepals 4, white, obovate-oblong, 10–12 × 3–4 mm, at apex acute, inside glabrous, outside appressed-puberulous, on margin velutinous. Stamens 6–7 mm long, glabrous; anthers oblong, 1 mm long, at apex obtuse. Ovaries pubescent; styles ca. 6 mm long, below the middle densely pubescent, above glabrous. Achenes compressed, narrowly ovate, 8–9 × 3.8–4.2 mm, appressed-puberulous; persistent styles ca. 6 mm long, near base pubescent, on the middle part puberulous, above glabrous. Fl. Jun. – Jul.

China (S Guangdong: Dinghushan). In forests or at forest margins; 250–400 m.

Additional specimens examined. Guangdong (广东): Dinghusan (鼎湖山), K. L. Shih 12964, 13191 (PE, WUK), 13591 (WUK).

2. ***Clematis apiifolia*** DC., Syst. 1:149. 1818; et Prodr. 1:6. 1824; Hook. & Arn., Bot. Beech. Voy. 258. 1841; Miq. in Ann. Mus. Bot. Lugd.-Bat. 3:2. 1867; Maxim. in Bull. Acad. Sci. St. Petersb. 22:218. 1877; Kuntze in Verh. Bot. Ver. Brand. 26:151. 1885; Forb. & Hemsl. in J. Linn. Soc. Bot. 23:2. 1886; Makino in Bot. Mag. Tokyo 8:331. 1897; Huth in Bull. Herb. Boiss. 5:1062. 1897; Finet & Gagnep. in Bull. Soc. Bot. France 50:531. 1903; Schneid., Ill. Handb. Laubh. 1:290, fig. 186c. 1906; Nakai in J. Coll. Sci. Univ. Tokyo 26(1):8. 1909; Rehd. & Wils. in Sarg., Pl. Wils. 1:336. 1913; Pei in Contr. Biol. Lab. Sci. Soc. China 10:103. 1936; Hand.-Mazz. in Acta Hort. Gotob. 13:213. 1939; Rehd., Man. Cult. Tr. & Shr., ed. 2, 217. 1940; Makino, Ill. Fl. Jap., rev. ed., 550, fig. 1650. 1953; Pei, Man. Sperm. S. Jiangsu 284, fig. 449. 1959; Ohwi, Fl. Jap. 442. 1965; Anonymous in Iconogr. Comm. Sin. 1:751, fig. 1501. 1972; Anonymous in Fl. Hupeh. 1:371. 1976; T. B. Lee, Ill. Fl. Korea 345, fig. 1380. 1979; M. C. Chang in Fl. Reip. Pop. Sin. 28:193, fig. 28. 1980; Anonymous in Fl. Jiangsu, 2:172. 1982; Tamura in Satake et al., Wild Flow Jap. 2:73, pl. 72:1. 1982; S. R. Lin & X. Z. Zhao in Fl. Fujian. 2:29. 1985; X. W. Wang in Fl. Anhui 2:339. 1986; Z. H. Lin in Fl. Zhejiang 2:286. 1992; Y. N. Lee, Fl. Korea 162, fig. 473. 1996; M. Johnson, Klematis 421. 1997; Grey-Wils., Clematis 35. 2000; W. T. Wang & Barth. in Fl. China 6:346. 2001. — *C. apiifolia* ssp. *normalis* Kuntze in l. c. Type: described from Japan, type specimen not seen.

*C. aquifolia* Steud., Nom. Bot., ed. 2, 378. 1841, nom. nud.

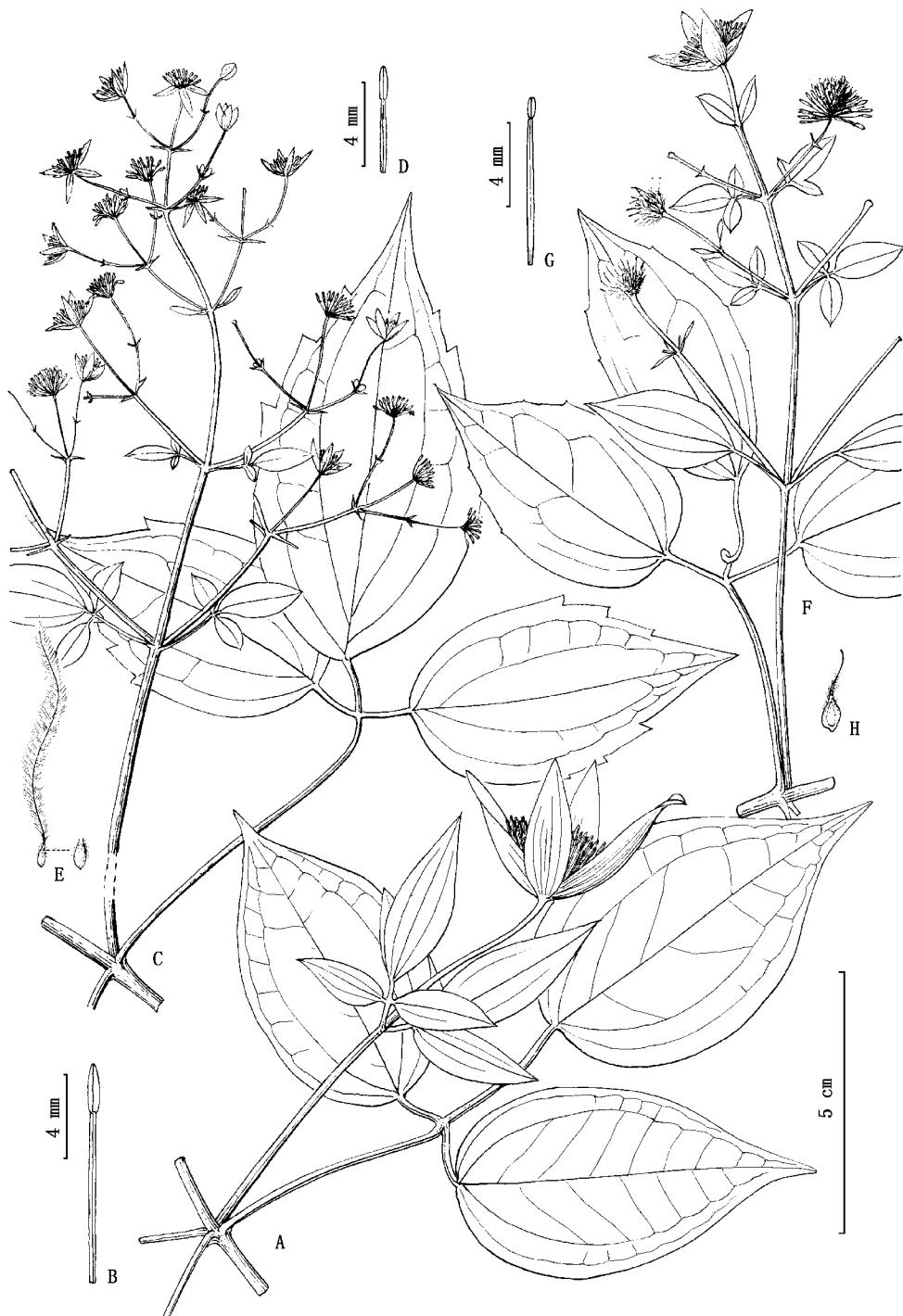


Fig. 3. A, B, *Clematis mashanensis* W. T. Wang. A, flowering branch; B, stamen. (from X. Z. Zheng 112) C - E, *C. apiculata* Hook. f. & Thoms. C, flowering branch; D, stamen; E, achene. (from J. D. Hooker & Thomson s. n.) F - H, *C. tinghuensis* C. T. Ting. F, flowering branch; G, stamen; (from G. L. Shi 12964) H, achene (from G. L. Shi 13191).

*C. apiifolia* ssp. *nipponensis* Kuntze in l. c. Type : described from a cultivated plant introduced from Japan , type specimen not seen.

*C. apiifolia* ssp. *franchetii* Kuntze in l. c. Type : Japan . Tasima , 1878 , Faurie 499 (holotype , P !).

## 女萎

This species consists of three varieties confined to eastern Asia.

### 2a. var. *apiifolia* Fig. 4 : A – C

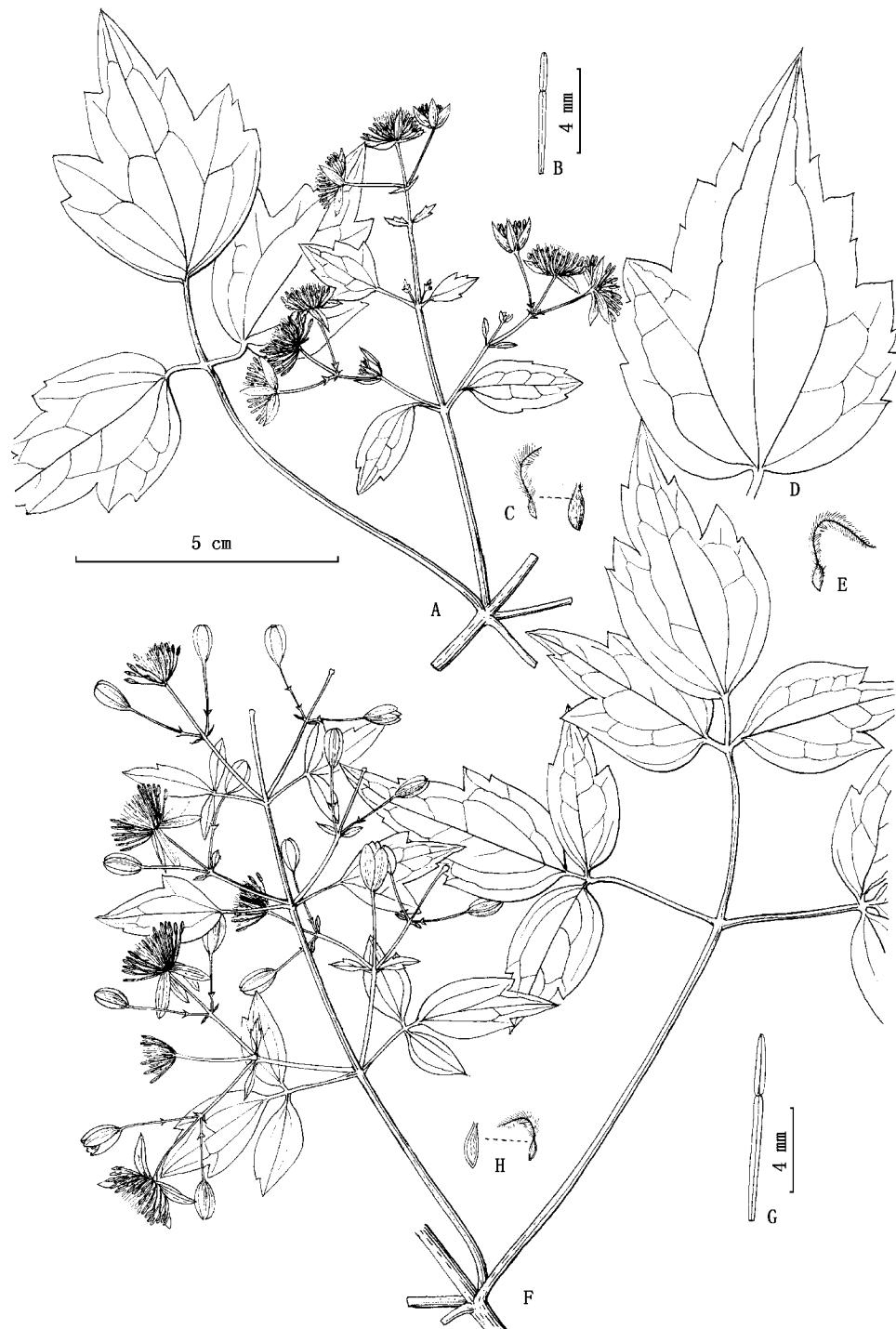
Woody vine. Branches shallowly ca. 6-sulcate , densely appressed-puberulous . Leaves ternate ; leaflets papery , ovate , broadly ovate , or elliptic ,  $2 - 8 \times 1.5 - 6$  cm , at apex acuminate or acute , at base rounded , rounded-truncate , or subcordate , at margin usually above sparsely dentate , seldom entire , sometimes indistinctly 3-lobed , adaxially puberulous , abaxially sparsely puberulous , basal veins abaxially slightly prominent or nearly flat ; petioles 1.5 – 6.5 cm long. Cymes axillary and terminal , (3 – )7 – many-flowered ; peduncles 1.8 – 9.5 cm long ; bracts elliptic or ovate , undivided or 3-lobed. Flower 1 – 1.8 cm in diam. ; pedicel 4 – 10 mm long , densely puberulous. Sepals 4 , white , obovate-oblong or lanceolate ,  $5 - 9 \times 1.6 - 3$  mm , at apex obtuse , inside densely puberulous , outside appressed-puberulous , on margin velutinous. Stamens 3 – 6 mm long , glabrous ; anthers narrowly oblong , 1.5 – 1.8 mm long , at apex obtuse. Ovaries pubescent ; styles 4 – 6 mm long , densely villous. Achenes compressed , oblong-ovate or fusiform ,  $3.5 - 4.5 \times 1 - 2$  mm , puberulous , not rimmed ; persistent styles 0.8 – 1.2 ( – 1.5 ) cm long , plumose. Fl. Jul. – Sept.

China ( S Anhui , N Fujian , C Hubei , S Jiangsu , NE Jiangxi , Zhejiang ) , Japan ( Honshu , Shikoku , Kyushu ) , S Korea. In thickets or at forest margins ; 150 – 1000 m.

Additional specimens examined. **China. Anhui** (安徽) : Huangshan (黄山) , T. N. Liou & P. C. Tsoong 2370 (PE) ; Jiujuashan (九华山) , E China Station Exped. 4698 (PE) ; Xiuning (休宁) , G. Yao 11254 (GH) ; Jixi (绩溪) , X. L. Liu 60 (PE) ; She Xian (歙县) , K. C. Kuan 75175 (PE) . **Hubei** (湖北) : Wuchang (武昌) , ? 15117 (PE) . **Jiangsu** (江苏) : Nanjing (南京) , C. S. Fan & Y. Y. Li 70 (K) ; Liyang (溧阳) , F. X. Liu et al. 2626 (PE) ; Wuxi (无锡) , W. X. Wu 4328 (PE) ; Suzhou (苏州) , W. Z. Fang et al. 40 (PE) ; Wu Xian (吴县) , W. Z. Fang et al. 196 (PE) ; Yixing (宜兴) , K. Ling 12410 (GH) . **Jiangxi** (江西) : Guangfeng (广丰) , M. X. Nie 5660 (PE) ; Yushan (玉山) , S. S. Lai 6294 (PE) . **Zhejiang** (浙江) : Tianmushan (天目山) , K. K. Tsoong 5013 , T. N. Liou 127 (PE) ; Tiantaishan (天台山) , H. H. Hu 293 (K) , X. Y. He 28095 (PE) ; Ningbo (宁波) , Faber 342 (K) ; Yandangshan (雁荡山) , C. Y. Chiao 14602 (GH) ; Simingshan (四明山) , X. Y. He 27756 (PE) ; Menganshan (莫干山) , Cheo & Wilson s. n. (K) , C. P. Jien 61158 (PE) ; Hangzhou (杭州) , S. Y. Zhang 1277 (PE) ; Longquan (龙泉) , S. Y. Zhang 4368 , 6780 (PE) ; Lishui (丽水) , S. Y. Zhang 6208 (PE) ; Changhua (昌化) , X. Y. He 26269 (PE) ; Jiangshan (江山) , J. X. Wang 1810 (PE) .

**Japan.** Echio , Yamazaki 6568 (K) ; Hondo , E. H. Wilson 7422 , Shiota 541 (GH) ; Fujiyama , Faurie 6627 (G) ; Nagasaki , Maximowicz s. n. (G , GH , K , P) ; Mie , Sato 30682 (GH) ; Tottori , Muroi 5390 (GH) ; Yokoska , Savatier 6 (K , P) ; Okinawa Isl. : Mt. Hedoraki , Tamura 24932 (PE) .

**Korea.** Chonbuk , Sun Byung-yun s. n. (GH) ; Anmyou Isl. , Yinger et al. 2548 (PE) ; Kanrasan , Uno 23579 (GH) ; Naiping , Faurie 10 (G , P) ; Quelpaert Isl. , E. H. Wilson 9415



**Fig. 4.** *Clematis apiifolia* DC. A – C, var. *apiifolia*. A, flowering branch; B, stamen; (from S. Y. Zhang 1277) C, achene (from S. Y. Zhang 4368). D, E, var. *argentilucida* (Lévl. & Van.) W. T. Wang. D, leaflet; E, achene. (from Anshun Exped. 1686) F – H, var. *biaternata* Makino. F, flowering branch; G, stamen; (from Mizushima 2123) H, achene (from Mizushima 2399).

(GH), Taquet 503 (G); Seoul, Dunn 4316 (K).

**2b. var. *argentilucida*** (Lévl. & Van.) W. T. Wang in Acta Phytotax. Sin. 31 (3): 216. 1993; M. C. Chang et al., List Pl. East China 162. 1993; W. T. Wang, Keys Vasc. Pl. Wu-ling Mount. 166. 1995; et in Fl. Yunnan. 11: 215. 2000; K. M. Liu in Fl. Hunan 2: 687. 2000; W. T. Wang & Barth. in Fl. China 6: 346. 2000. — *C. vitalba* L. var. *argentilucida* Lévl. & Van. in Bull. Acad. Intern. Geogr. Bot. 11: 167. 1902. — *C. grata* Wall. var. *argentilucida* (Lévl. & Van.) Rehd. in J. Am. Arb. 17: 318. 1936, p. p. quoad nom., excl. syn. *C. grata* var. *grandidentata* Rehd. & Wils.; Lauener & Green in Not. R. Bot. Gard. Edinb. 23 (4): 581. 1961. — *C. argentilucida* (Lévl. & Van.) W. T. Wang in Acta Phytotax. Sin. 6 (4): 387. 1957, p. p. quoad nom. tantum. — *C. argentilucida* (Lévl. & Van.) H. Eichler in Bibl. Bot. 124: 24. 1958. Type: China. Guizhou (贵州): Guiyang (贵阳), Bodinier 1621 (lectotype, E!); W. T. Wang, 1993; same locality, 1900-07-03, Bodinier s. n. (syntype, E!).

*C. apiiifolia* DC. var. *obtusidentata* Rehd. & Wils. in Sarg., Pl. Wils. 1: 336. 1913; Hand.-Mazz., Symb. Sin. 7: 321. 1931; et in Acta Hort. Gotob. 13: 213. 1939; Pei in Contr. Biol. Lab. Sci. Soc. China 10: 103. 1936; et in Sunyatsenia 4: 164. 1940; Rehd., Man. Cult. Tr. & Shr., ed. 2, 217. 1940; W. T. Wang in Acta Phytotax. Sin. 6 (2): 220. 1957; Ting in Fl. Reip. Pop. Sin. 28: 193. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1: 106. 1984; Y. K. Li in Fl. Guizhou. 3: 59. 1986; X. W. Wang in Fl. Anhui 2: 339. 1986; W. T. Wang in Fl. Guangxi 1: 228. 1991; Z. H. Li in Fl. Zhejiang 2: 286. 1992; L. Q. Li in Vasc. Pl. Hengduan Mount. 1: 526. 1993; M. Johnson, Klematis 423. 1997. — *C. obtusidentata* (Rehd. & Wils.) H. Eichler in Bibl. Bot. 124: 24. 1958; Anonymous in Iconogr. Corm. Sin. 1: 751. 1972; Fl. Tsinling. 1 (2): 300. 1974; Anonymous in Fl. Hupeh. 1: 372, fig. 525. 1976; Ding et al., Fl. Henan. 1: 457, fig. 582. 1981. Type: China. Hubei (湖北): Badong (巴东), 1907-08, E. H. Wilson 4276 (holotype, GH!; isotypes, E!, K!); Changlo, 1907-06, E. H. Wilson 1233a (paratype, GH!).

*C. grata* Wall. var. *lobulata* auct. non Rehd. & Wils. : Chun in Sunyatsenia 2: 50. 1934.  
钝齿铁线莲 Fig. 4:D, E

Leaves ternate; leaflets larger, usually broadly ovate, 2.5–13 × 2.2–9.5 cm, at margin coarsely and obtusely dentate, abaxially usually densely puberulous or velutinous, sometimes sparsely puberulous. Achenes densely puberulous, not rimmed; persistent styles 1.5–2.7 cm long. Fl. May–Jul.

China (S Anhui, S Gansu, N Guangdong, N Guangxi, Guizhou, S Henan, Hubei, Hunan, S Jiangsu, Jiangxi, S Shaanxi, Sichuan, SE Yunnan, W Zhejiang). In forests or by streams; 200–2300 m.

Additional specimens examined. **China. Anhui** (安徽): Huangshan (黄山), M. J. Wang 3593 (PE); Jiuhuashan (九华山), R. C. Ching 2774 (GH, K, US); Guichi (贵池), Anhui Exped. 59-7229 (PE); Huoshan (霍山), E China Station Exped. 6694 (PE, SHM); Jinzhai (金寨), Anhui Exped. 59-60874 (PE). **Gansu** (甘肃): Wen Xian (文县), Z. Y. Zhang 14355 (PE). **Guangdong** (广东): Lechang (乐昌), C. L. Tso 20859 (K, PE); Ruyuan (乳源), C. Wang 43967 (PE), S. P. Ko 52784 (GH); Renhua (仁化), W. T. Tsang 26455 (GH); Yangshan (阳山), T. M. Tsui 584 (K, P, PE). **Guangxi** (广西): Leyie (乐业), R. C. Ching 6175 (GH, PE); Rongshui (融水), S. Q. Chen 14071 (PE); Yongfu (永福), Z. Z. Chen

50108 (PE); Pingnan (平南), C. Wang 39341 (GH); Pingle (平乐), S. Q. Zhong 62798 (PE); Yangshuo (阳朔), S. H. Shan 950 (PE); Guilin (桂林), W. T. Tsang 27805, 28449 (GH, US); Xing'an (兴安), Guangxi Exped. 53-1205 (PE); Quanxian (全县), W. T. Tsang 27651 (GH, US); Ziyuan (资源), Z. Z. Chen 51837 (PE); He Xian (贺县), S. Q. Zhong 62762 (PE). **Guizhou** (贵州): Xingren (兴仁), Guizhou Exped. 60-7411 (PE); Anlong (安龙), Guizhou Exped. 60-4969 (PE); Pingba (平坝), Anshun Exped. 59-1686 (PE); Pinfa (平伐), Cavalerie 168 (P); Rongjiang (榕江), S. Guizhou Exped. 59-2883 (PE); Leishan (雷山), C. P. Jien et al. 50592 (PE); Dushan (独山), Libo Exped. 59-1113 (PE); Duyun (都匀), Y. Tsiang 5687 (GH); Nayong (纳雍), Bijie Exped. 59-782 (PE); Zunyi (遵义), Steward et al. 29 (GH, K, P, PE); Fanjingshan (梵净山), Steward & C. Y. Chiao 601 (GH, LE, P, WUK); Tongren (铜仁), Wulingshan Exped. 88-1437 (PE); Shiqian (石阡), Wulingshan Exped. 88-2163 (PE). **Henan** (河南): Shangcheng (商城), Henan Exped. 59-10084 (PE). **Hubei** (湖北): Badong (巴东), H. C. Chow 661 (PE); Hefeng (鹤峰), H. J. Li 5580 (PE); Xianfeng (咸丰), H. J. Li 9202 (PE); Jianshi (建始), L. Y. Dai 128 (PE); Yichang (宜昌), Henry 733, 1556, 2015A (K); Xingshan (兴山), H. J. Li 919 (PE). **Hunan** (湖南): Shimen (石门), Hupingshan Exped. 87-469 (PE); Sangzhi (桑植), L. H. Liu 9301 (PE); Cili (慈利), K. S. Chow 777 (GH, PE); Yongshun (永顺), L. Q. Li et al. 1395 (PE); Xinhua (新晃), Wulingshan Exped. 88-776 (PE); Xuefengshan (雪峰山), Z. T. Li 2403 (PE); Pingjiang (平江), Pingjiang Exped. 8500305 (HUTM); Hengshan (衡山), Y. Liu 220 (PE); Shaoyang (邵阳), H. L. Tian 109 (HUTM); Xinning (新宁), Ziyunshan Exped. 84-1949 (PE); Yizhang (宜章), S. Q. Chen 2096 (PE), C. S. Fan & Y. Y. Li 138 (G). **Jiangsu** (江苏): Yixing (宜兴), S. H. Mao 249 (PE). **Jiangxi** (江西): Shangyou (上犹), Jiangxi Exped. 71-518 (PE); Suichuan (遂川), J. S. Yuo 4250 (PE); Jinggangshan (井冈山), J. S. Yuo 4918 (PE); Lianhua (莲花), S. S. Lai 1423 (PE); Ji'an (吉安), S. S. Lai 831 (PE); Wugongshan (武功山), S. S. Lai 1704 (PE); Boyang (波阳), Q. H. Li 1132 (PE); Jiujiang (九江), Bullok 105 (US); Lushan (庐山), H. H. Hu 1378 (GH, K), 2300 (PE); Wuning (武宁), S. S. Lai 1423 (PE). **Shaanxi** (陕西): Zhenping (镇坪), Shaanxi Veg. Group 66-110 (WUK). **Sichuan** (四川): Yaan (雅安), C. Y. Chiao 1270 (GH); Tianquan (天全), F. C. Tai 4027 (US); Baoxing (宝兴), K. C. Kuan, W. T. Wang et al. 2608 (K, PE); Jinchuan (金川), X. Li 77395 (PE); Pingwu (平武), 1885-08-29, Potanin s. n. (LE); Chengdu (成都), F. T. Wang 22143 (PE); Zhaohua (昭化), K. S. Hao 311 (P, PE); Fengjie (奉节), H. F. Zhou 26463 (PE); Nanchuan (南川), W. P. Fang 1257 (GH, P, PE), G. F. Li 62680 (PE); Wulong (武隆), F. D. Pu 421 (PE). **Yunnan** (云南): Wenshan (文山), K. M. Feng 11076 (PE). **Zhejiang** (浙江): Tianmushan (天目山), T. Tang & W. Y. Hsia 109 (GH); Jiande (建德), Hangzhou Bot. Gard. Exped. 29322 (PE); Qingyuan (庆元), R. C. Ching 2412 (GH, US); Hangzhou (杭州), T. Tang & W. Y. Hsia 359 (GH); Ningbo (宁波), X. Y. He 27288 (HHBG).

**2c. var. *bibernata*** Makino in Bot. Mag. Tokyo 20: 8. 1906; Ohwi, Fl. Jap. 515. 1953; Anonymous in Nov. Fl. Nasu. 178. 1972; Kitamura & Murata, Colour. Ill. Herb. Pl. Jap., rev. ed., 227. 1980; Tamura in Satake et al., Wild Flow. Jap. 2: 73. 1982; W. T. Wang in Acta Phytotax. Sin. 38 (4): 308. 2000. Syntypes: Japan, Matsuda s. n., Makino s. n., Yatabe s. n.

*C. brevicaudata* auct. non DC.: Makino in Bot. Mag. Tokyo 8: 331. 1897 et 26: 82. 1912; Matsum. Ind. Pl. Jap. 2: 10. 1912; Makino., Ill. Fl. Jap., rev. ed., 551, fig. 1651.

1953 ; M. Johnson, Klematis 426. 1997.

Fig. 4 : F – H

Leaves biternate. Achenes only near top pilose, elsewhere glabrous, at margin narrowly rimmed.

Japan (C Honshu). On slopes, in bushes; 350 – 1200 m.

Specimens examined. **Japan** : Mt. Fuji, Makino 76006 (TI); Pref. Yamanashi, Makino 76007 (TI), Fruse s. n. (GH); Pref. Hiroshima, Makino 76610 (TI); Nara, Mt. Wasamata, Tsugara 7423 (GH); Yamagata, Takahashi 281 (GH); Nikko, Mizushima 2123 (GH), Murata et al. 15295 (TI); Musashi, Mizushima 14996 (TI); Itsukaichishi, Yamazaki 9679 (TI).

**3. *Clematis mashanensis* W. T. Wang in Bull. Bot. Res. Harbin 9(2): 7, fig. 3: 1 – 3. 1989 ; M. Johnson, Klematis 445. 1997 ; Grey-Wils., Clematis 43. 2000 ; W. T. Wang & Barth. in Fl. China 6: 346. 2001. Type : China. Guangxi (广西) : Mashan (马山), Longou (弄偶), 1964-04-18, X. Z. Zheng 112 (holotype, PE!).**

马山铁线莲 Fig. 3 : A, B (see p. 12)

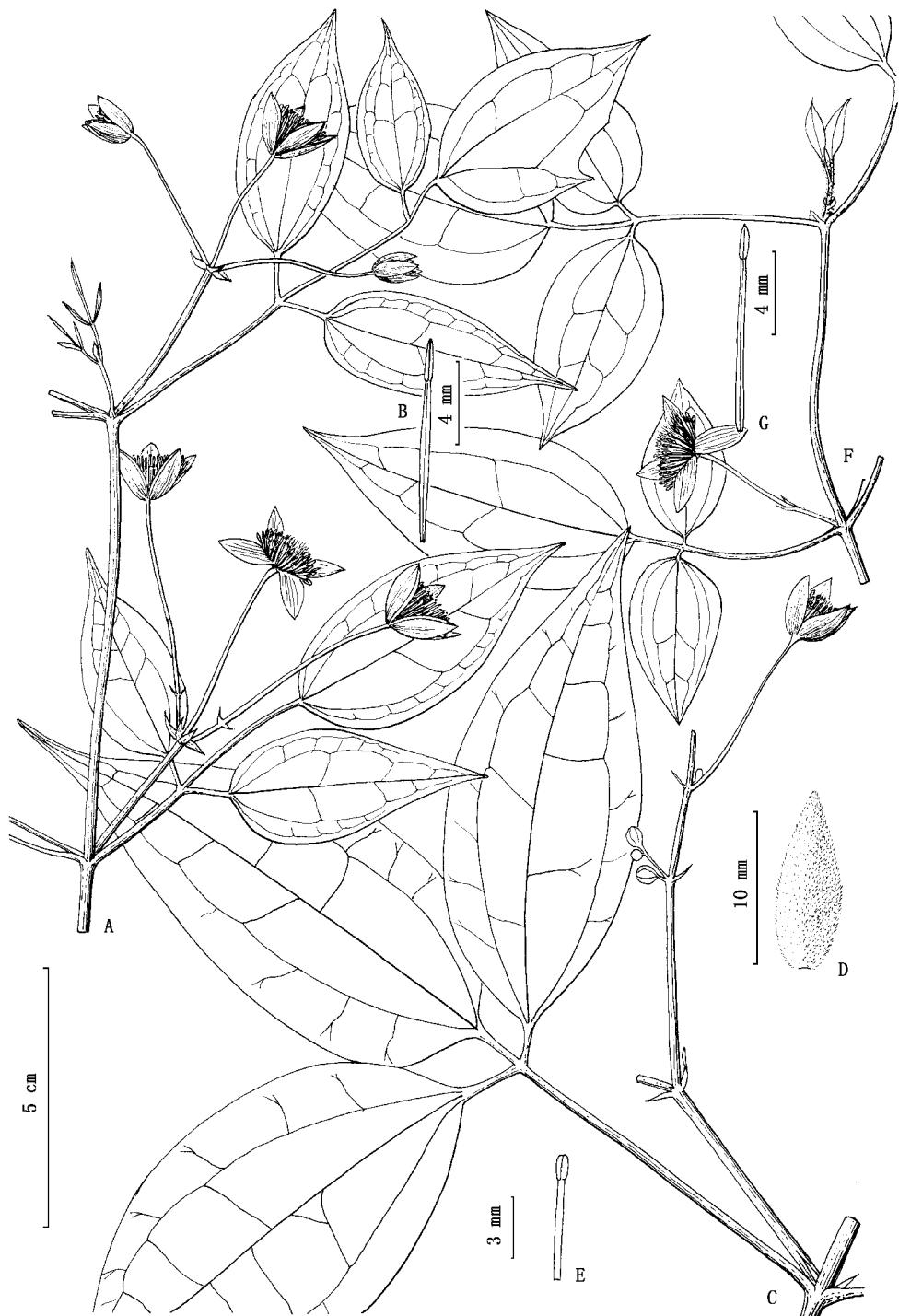
Woody vine, turning black when drying. Branches shallowly 4 – 6-sulcate, sparsely puberulous. Leaves ternate; leaflets coriaceous, ovate or narrowly ovate,  $6.5 - 7 \times 2.8 - 4.3$  cm, at apex acuminate, at base rounded, at margin entire, adaxially glabrous, abaxially only on midrib sparsely puberulous, basal veins abaxially slightly prominent; petioles ca. 6 cm long, puberulous. Cymes axillary, 1-flowered; peduncles  $3.5 - 4.7$  cm long, puberulous; bracts petiolate, ternate, 3 – 4 cm long, with broadly lanceolate leaflets, or simple, lanceolate, 1.6 – 3 cm long. Flower 4.5 – 5 cm in diam.; pedicel 2.8 – 3.6 cm long, puberulous. Sepals 4, spreading, lanceolate or oblong-lanceolate,  $2.2 - 2.6 \text{ cm} \times 9 - 10$  mm, at apex slightly acute, inside glabrous, outside densely appressed-sericeous, on margin velutinous. Stamens 7.5 – 13 mm long, glabrous; anthers narrowly oblong, 2.5 – 3 mm long, at apex obtuse or minutely apiculate. Ovaries pubescent; styles ca. 10 mm long, densely villous. Fl. Apr.

China (Guangxi : Mashan). On top of limestone hills; 410 m.

**4. *Clematis tenuipes* W. T. Wang in Acta Phytotax. Sin. 6(4): 377, pl. 59, fig. 5. 1957 et 36(2): 155. 1998 ; et in Fl. Yunnan. 11: 224. 2000 ; W. T. Wang & Barth. in Fl. China 6: 346. 2001. — *C. parviloba* Gardn. & Champ. var. *tenuipes* (W. T. Wang) Ting in Fl. Reip. Pop. Sin. 28: 182. 1980, p. p. excl. pl. Sichuan. ; C. Y. Wu, Ind. Fl. Yunnan. 1: 112. 1984 ; M. Johnson, Klematis 446. 1997 ; Grey-Wils., Clematis 44. 2000. Type : China. Yunnan (云南) : Funing (富宁), Longmai, 1940-05-07, C. W. Wang 87086 (holotype, PE!); same locality, Banloun, 1940-04-11, C. W. Wang 88318 (paratype, PE!).**

细梗铁线莲 Fig. 5 : F, G

Woody vine, turning black when drying. Branches shallowly 4-sulcate, appressed-puberulous. Leaves ternate; leaflets subcoriaceous, elliptic-ovate or ovate,  $4.2 - 6.8 \times 1.6 - 3$  cm, at apex acute, acuminate, or shortly caudate, at base rounded or subcordate, at margin entire, on both surfaces only on basal veins strigose, basal veins adaxially impressed, abaxially slightly prominent; petioles 2 – 4 cm long. Cymes axillary, 1-flowered; peduncles slender, 1 – 2.5 cm long, appressed-puberulous; bracts linear, 3 – 4 mm long, densely puberulous. Flower 2.5 – 3 cm in diam.; pedicel 1.8 – 2.2 cm long, puberulous. Sepals 4, white, elliptic-oblong,  $1.2 - 1.5 \times 0.5 - 0.7$  cm, at apex obtuse, inside glabrous, outside densely sericeous-puberulous, on margin velutinous. Stamens 8 – 10 mm long, glabrous; anthers oblong, ca. 1.5 mm long, at apex minutely



**Fig. 5.** A, B, *Clematis vaniotii* Lévl. & Port. A, flowering branch; B, stamen. (from Cavalerie 2798) C-E, *C. cinnamomeoides* W. T. Wang. C, flowering branch; D, sepal; E, stamen. (from Eberhardt 3344) F, G, *C. tenuipes* W. T. Wang. F, flowering branch; G, stamen. (from C. W. Wang 87086)

apiculate. Ovaries pubescent; styles ca. 6 mm long, densely brownish-villous. Fl. May.

China (SE Yunnan: Funing). In forests; 700–1000 m.

**5. *Clematis formosana*** Kuntze in Hook. Ic. Pl. 20: pl. 1945. 1891; Matsum. & Hayata in J. Coll. Sci. Univ. Tokyo 22:5. 1906; Hayata, Ic. Pl. Formos. 1:24. 1911; T. S. Liu & Hsieh in Fl. Taiwan 2:483. 1976; T. Y. Yang & T. C. Huang in Taiwania 40(3):219. 1995; et in Fl. Taiwan, ed. 2, 2:521, pl. 242. 1996; M. Johnson, Klematis 428. 1997; Grey-Wils., Clematis 34. 2000; W. T. Wang & Barth. in Fl. China 6:347. 2001. Type: China. Taiwan (台湾): Ape's Hill, Playfair 307 (lectotype, K! — T. Y. Yang & T. C. Huang, 1995).

*C. sasakii* Shimizu in Taiwania 18(2):173. 1973. Type: China. Taiwan (台湾): Daikwanzan, 1933-10, Sasaki s. n. (holotype, TAI).

### 台湾铁线莲

Perennial herbaceous vine. Branches shallowly 4–6-sulcate, densely puberulous. Leaves ternate; leaflets papery, lanceolate or narrowly ovate, seldom ovate,  $3.2 - 6.3(-7.4) \times (0.8 - )1 - 2.3(-3.4)$  cm, at apex attenuate or acuminate, mucronate, at base broadly cuneate, at margin entire, undivided or 2–3-lobed, adaxially glabrous or subglabrous, abaxially sparsely puberulous, basal veins abaxially slightly prominent; petioles 2.8–6.2 cm long. Cymes axillary and terminal, 3–5-flowered; peduncles 0.5–3 cm long, densely puberulous; bracts petiolate, narrowly ovate or lanceolate. Flower 1.5–2.5 cm in diam.; pedicel 0.5–3.4 cm long, densely puberulous. Sepals 4, white, narrowly oblong,  $8 - 13 \times 3 - 4$  mm, at apex acute, mucronate, inside glabrous, outside densely appressed-puberulous, on margin velutinous. Stamens 2–9 mm long, glabrous; anthers oblong, 0.8–1 mm long, at apex obtuse. Ovaries pubescent; styles 6–7 mm long, densely villous. Achenes compressed, ovate or elliptic,  $3 - 5 \times 2.5$  mm, pubescent; persistent styles 1.5–4 cm long, yellowish-plumose. Fl. Nov. to Jan. of the next year.

China (S & E Taiwan). In sunny places or at forest margins.

Additional specimens examined. **China. Taiwan**: Gaoxiong (高雄), C. Y. Chiang & P. C. Wang 3121 (PE), Henry s. n. (GH, US); Pingdong (屏东), Kuraru, E. H. Wilson 10996 (GH, K, US); without precise locality, Henry 31 (MO).

**6. *Clematis cinnamomoides*** W. T. Wang in Acta Phytotax. Sin. 38(5):409, fig. 2:4–6. 2000. Type: Vietnam. Langson: Raulinh, Eberhardt 3342 (holotype, P!).

### Fig. 5: C – E

Woody vine, up to 12 m long. Branches shallowly 6–8-sulcate, sparsely appressed-puberulous. Leaves ternate; leaflets coriaceous, elliptic-ovate,  $8 - 11 \times 3 - 5$  cm, at apex acuminate or long acuminate, at base rounded or broadly cuneate, at margin entire, on both surfaces glabrescent, adaxially slightly and abaxially conspicuously reticulate, basal veins abaxially strongly prominent; petioles ca. 6.5 cm long, sparsely appressed-puberulous or glabrescent. Panicles axillary, with lax flowers; peduncles ca. 4.5 cm long, appressed-puberulous; bracts subulate, ca. 7 mm long. Flower ca. 2 cm in diam.; pedicel ca. 1.5 cm long, densely appressed-tawny-puberulous. Sepals 4, white, obovate-oblong, ca.  $12 \times 5$  mm, at apex acute, inside glabrous, outside densely appressed-tawny-puberulous, on margin tawny-velutinous. Stamens ca. 7 mm long, glabrous; anthers oblong, ca. 1.2 mm long, at apex obtuse. Carpels densely pubescent except the glabrous stigmas.

Vietnam.

**7. *Clematis burmanica*** Lace in Kew Bull. 1915:394. 1915; Gupta in Bull. Nat. Bot. Gard. Lucknow 54: pl. 6. 1961; Kapoor in I. c. 78:17. 1962; Tamura in J. Phytogeogr. Taxon. 28:

14. 1980 ; Tamura in Thai For. Bull. Bot. 25 : 69. 1997 ; M. Johnson , Clematis 426. 1997 ; Grey-Wils. Clematis 34. 2000 ; W. T. Wang in Acta Phytotax. Sin. 38( 4 ):310. 2000 ; W. T. Wang & Barth. in Fl. China 6 :347. 2001. Type : Myanmar : Maymyo , Ani Skan , 900 m , 1912-08-25 , Lace 5927 ( holotype & isotype , K !).

**缅甸铁线莲** Fig. 6 : F , G

Woody vine. Branches shallowly 10-sulcate , appressed-puberulous. Leaves ternate ; leaflets subcoriaceous or papery , ovate or triangular-ovate , 6 – 11 × 3.4 – 6 cm , at apex attenuate or acute , at base rounded or truncate-rounded , at margin entire , adaxially on basal veins sparsely puberulous , abaxially on basal veins and veinlets sparsely pubescent , basal veins abaxially slightly prominent ; petioles 6 – 10 cm long. Cymes axillary , many-flowered , panicle-like ; peduncles 0.7 – 9.5 cm long , sparsely puberulous ; bracts petiolate , narrowly elliptic , 0.7 – 2.5 cm long. Flower 1.3 – 2.4 cm in diam. ; pedicel 0.6 – 2.6 cm long , densely puberulous. Sepals 4 , white , narrowly oblong , 6.5 – 14 × 3 – 5 mm , at apex acute or obtuse , inside glabrous , outside densely appressed-puberulous , on margin velutinous. Stamens 5 – 9 mm long , glabrous ; anthers narrowly oblong or oblong , 1.2 – 1.8 mm long , at apex obtuse. Ovaries densely puberulous ; styles ca. 5 mm long , densely villous. Achenes compressed , broadly elliptic , ca. 5 × 4 mm , densely appressed-puberulous ; persistent styles ca. 3.5 cm long , yellow-plumose. Fl. Aug. – Dec.

China ( SW Yunnan ) , Myanmar , N Thailand. In forests or on lime-stones ; 900 – 1700 m.

Additional specimens examined. **China. Yunnan** ( 云南 ) : Lancang ( 澜沧 ), Y. Y. Qian 3049 , 3188 ( PE ). **Thailand**. Chiengmai , Smitinand 7237 ( K ), Put 363 ( K ); Chiang Rai , Geesink & Heipko 8243 ( K ).

**8. Clematis apiculata** Hook. f. & Thoms. in Hook. f. Fl. Brit. Ind. 1 :4. 1872 ; Finet & Gagnep. in Bull. Soc. Bot. France 50 : 531. 1903 ; Kanjilal & Das , Fl. Assam 1( 1 ):3. 1934 ; Mukerjee in Bull. Bot. Surv. Ind. 1( 1 ):138. 1959 ; Gupta in Bull. Nat. Bot. Gard. Lucknow 53 : pls. 3 – 4. 1961 ; Kapoor in l. c. 78 :11. 1962 ; Rau in Sharma et al. , Fl. Ind. 1 :57. 1993 ; M. Johnson , Clematis 421. 1997 ; Grey-Wils. , Clematis 34. 2000 ; W. T. Wang in Acta Phytotax. Sin. 38( 5 ):409. 2000. — *C. apiifolia* DC. ssp. *apiculata* ( Hook. f. & Thoms. ) Kuntze in Verh. Bot. Ver. Brand. 26 :151. 1885. — *C. apiifolia* var. *apiculata* ( Hook. f. & Thoms. ) Honda , Nom. Pl. Jap. 93. 1939. Type : India. Khasia , 1850-09 , J. D. Hooker & Thomson s. n. ( lectotype , K ! ; isolectotype , GH ! ); same locality , 1844 , Griffith 462 ( syntype , K ! ); Churra , 1850-08-12 , J. D. Hooker & Thomson s. n. ( syntype , K ! ).

Fig. 3 : C , D ( see p. 12 )

Woody vine. Branches very shallowly 8 – 10-sulcate , appressed-puberulous. Leaves ternate ; leaflets papery , ovate or narrowly ovate , 4 – 10 × 1.6 – 4.8 cm , at apex long acuminate , at base rounded or subcordate , at margin above the middle pungently dentate or serrate , on both surfaces sparsely pilose , abaxially slightly reticulate , basal veins abaxially prominent ; petioles 2.2 – 8 cm long , densely puberulous. Cymes axillary and terminal , many-flowered , panicle-like ; peduncles 4 – 13 cm long ; bracts petiolate , foliaceous or small , simple , ovate or elliptic , 0.5 – 3.5 cm long. Flower ca. 1.4 cm in diam. ; pedicel 0.6 – 2.2 cm long , densely puberulous. Sepals 4 , narrowly oblong , 5.5 – 7 × 1.2 – 2 mm , at apex obtuse , inside glabrous , outside brownish-velutinous. Stamens 3.5 – 5 mm long , glabrous ; anthers narrowly oblong or linear , 2 – 3 mm long , at apex minutely apiculate. Ovaries densely pubescent ; styles ca. 4 mm long , densely villous. Achenes strongly compressed , broadly elliptic or ovate , ca. 4 × 3 mm , appressed-pubescent , slightly rimmed

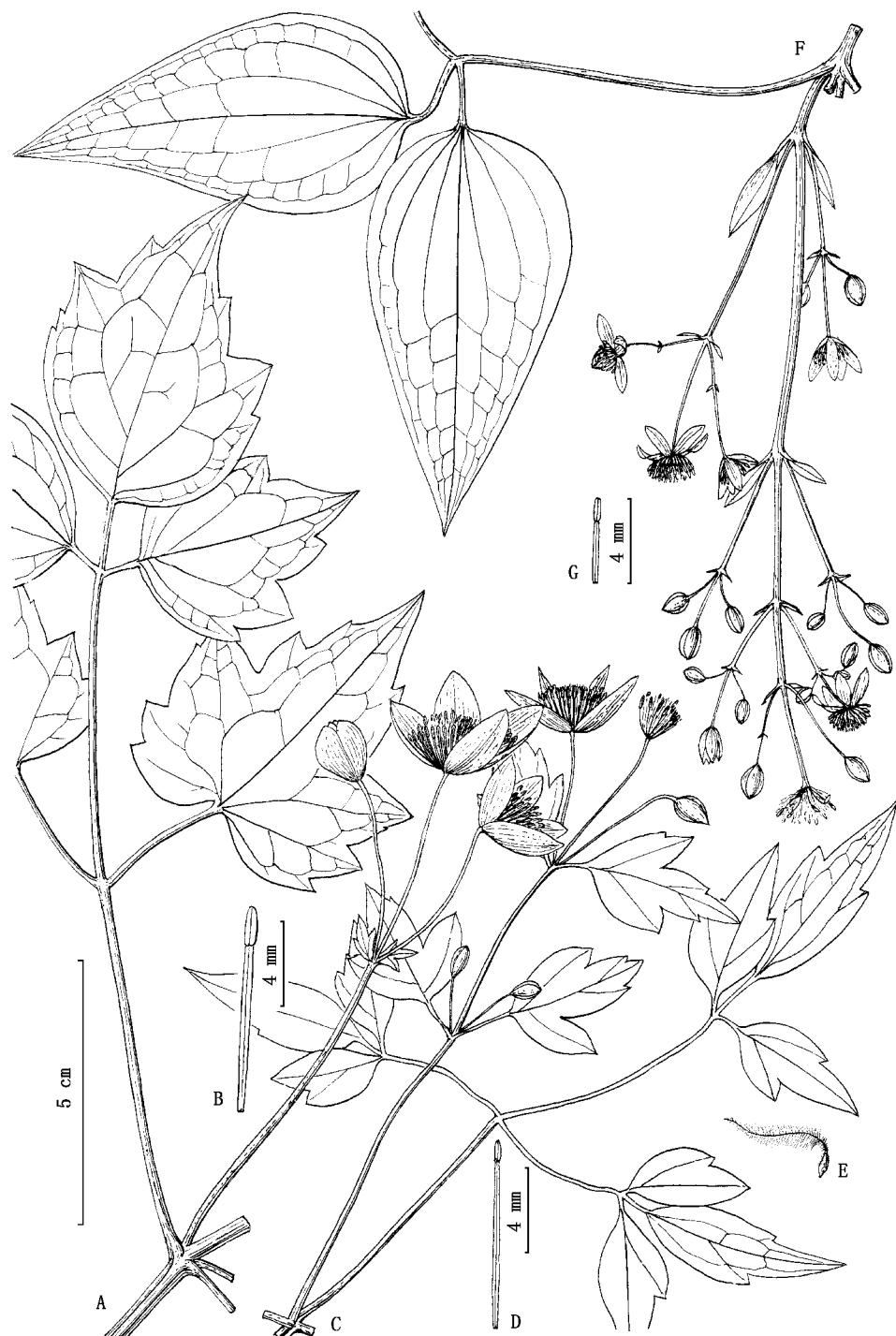


Fig. 6. A, B, *Clematis trichotoma* Nakai. A, flowering branch; B, stamen. (from March et al. 118) C-E, *C. pierotii* Miq. C, flowering branch; D, stamen; E, achene. (from Maximowicz s. n.) F, G, *C. burmanica* Lace. F, flowering branch; G, stamen. (from Y. Y. Qian 3049)

at margin; persistent styles 4–5 cm long, plumose. Fl. Aug.

India (Meghalaya, Manipur).

Additional specimens examined. **India**. Khasia, Griffith s. n. (K), Clarke 45286A (G); Manipur: Kaithemube, Clarke 42063 (K), 42063c (LE), 42063J (G), Bore 209 (K).

**9. *Clematis vaniotii*** Lévl. & Port. in Repert. Sp. Nov. 9: 20. 1910; Lévl. Fl. Kouy-Tchéou 334. 1915; Rehd. in J. Arn. Arb. 10: 186. 1929; Hand.-Mazz. in Acta Hort. Gotob. 13: 584. 1939; Lauener & Green in Not. R. Bot. Gard. Edinb. 23: 584. 1916; M. C. Chang in Fl. Reip. Pop. Sin. 28: 177. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1: 114. 1984; Y. K. Li in Fl. Guizhou. 3: 55. 1986; M. Johnson, Klematis 643. 1997; Grey-Wils., Clematis 106. 2000; W. T. Wang in Fl. Yunnan. 11: 224. 2000; W. T. Wang & Barth. in Fl. China 6: 347. 2001. Type: China. Guizhou (贵州): Lofou, 1909-03, Cavalerie 3581 (holotype, E!; isotypes, K!, P!).

*C. armandii* Franch. var. *pinfaensis* Finet & Gagnep. in J. de Bot. 21: 16. 1908. Syntypes: China. Guizhou (贵州): Pinfa (平伐), 1903-04-13, Cavalerie & Fortunat 986, 988 (P!).

*C. phaseolifolia* W. T. Wang in Acta Phytotax. Sin. 6(4): 377. 1957. Type: China. Yunnan (云南): Funing (富宁), Longmai, C. W. Wang 88726 (holotype, PE!); Guangnan (广南), C. W. Wang 87882 (paratype, PE!).

### 云贵铁线莲 Fig. 5: A, B (see p. 18)

Woody vine. Branches shallowly 8-sulcate, sparsely puberulous or glabrous. Leaves pinnate, 5-foliolate, or ternate; leaflets papery, 3–10 × 2–5 cm, at apex acuminate, at base rounded or rounded-truncate, at margin entire or sometimes 1–3-denticulate, on both surfaces on veins very sparsely puberulous, basal veins abaxially nearly flat; petioles 3–7 cm long. Cymes axillary, (1–)3-flowered; peduncles 1.8–5.5 cm long, glabrous; bracts lanceolate, 3–7 mm long. Flower 2–3.4 cm in diam.; pedicel 2–5 cm long, only near apex sparsely puberulous. Sepals 4, yellowish-white, oblong or obovate-oblong, 10–16 × 4–5.5 mm, at apex obtuse, inside densely puberulous, outside above sparsely puberulous, elsewhere glabrous, on margin velutinous. Stamens 7–12 mm long, glabrous; anthers oblong or narrowly oblong, 2–2.6 mm long, at apex obtuse. Ovaries pubescent; styles 7–9 mm long, densely villous. Achenes compressed, narrowly elliptic, ca. 3 × 1.8 mm, pubescent; persistent styles ca. 4.5 cm long, yellowish-plumose. Fl. Apr.

China (S Guizhou, SE Yunnan). On slopes, at forest margins, or in forests; 600–1500 m.

Additional specimens examined. **Guizhou** (贵州): Zhenfeng (贞丰), D. Z. Fu et al. 215 (PE); Libo (荔波), X. M. Wang 158, 447 (HGAS); Pinfa (平伐), Cavalerie 2798 (K, P); Kai-tcheou, Cavalerie 3051 (K, P).

**10. *Clematis gratopsis*** W. T. Wang in Acta Phytotax. Sin. 6(4): 385, pl. 59, fig. 8. 1957; Fl. Tsinling. 1(2): 299. 1974; Fl. Hupeh. 1: 372. 1976; Ting in Fl. Reip. Pop. Sin. 28: 184, pl. 56. 1980; W. T. Wang in Keys Vasc. Pl. Wuling Mount. 167. 1995; M. Johnson, Klematis 444. 1997; J. Q. Fu in Fl. Loe.-Plat. Sin. 1: 449. 2000; K. M. Liu in Fl. Hunan 2: 692. 2000; Grey-Wils., Clematis 41. 2000; W. T. Wang & Barth. in Fl. China 6: 347. 2001. Type: China. Sichuan (四川): Nanchuan (南川), Jinfoshan (金佛山), 1939-10, C. Pei 7734 (holotype, PE!); Chengkou (城口), K. L. Chü 2090 (paratype, PE!). Hubei (湖北): Jianshi (建始), L. Y. Dai & C. H. Qian 1704 (paratype, PE!); Zigui (秭归), T. P. Wang 11731 (paratype, PE!).

*C. grata* Wall. var. *lobulata* Rehd. & Wils. in Sarg. Pl. Wils. 1 : 337. 1913, p. p. excl. pl. Taiwan. ; Rehd. , Man. Cult. Tr. & Shr. , ed. 2, 219. 1940. Type : China. Hubei (湖北) : Yichang (宜昌), Henry 4330 (holotype, GH!; isotypes, K!, P!), 2721 (paratypes, GH!, K!, P!); Badong (巴东), E. H. Wilson 665 (paratypes, GH!, K!, US!). Sichuan (四川) : Without precise locality, Henry 7230 (paratype, GH!).

### 金佛铁线莲

Woody vine, turning black when drying. Branches shallowly 4–5-sulcate, densely puberulous and mixed with longer hairs. Leaves pinnate, (3–)5-foliate; leaflets papery, broadly to narrowly ovate, or deltoid-ovate, 1.8–7 × 1–7.8 cm, at apex long acuminate or acuminate, at base subcordate, cordate, or rounded-truncate, at margin sparsely unequally dentate, 3-lobed or 3-parted, adaxially densely appressed-pubescent, abaxially densely puberulous, on veins with longer hairs, basal veins abaxially nearly flat; petioles 2–5.5 cm long, densely pubescent. Cymes axillary and terminal, (1–)3–14-flowered; peduncles 3–9 cm long; bracts short petiolate, elliptic or ovate, 0.7–2 cm long. Flower 1.3–1.7 cm in diam. ; pedicel 0.8–2.4 cm long, puberulous. Sepals 4, white, obovate-oblong, 7–9.5 × 2.8–5 mm, at apex obtuse, inside glabrous, outside densely puberulous or velutinous, on margin velutinous. Stamens 6–8.5 mm long, glabrous; anthers narrowly oblong, 1–1.2 mm long, at apex obtuse. Ovaries pubescent; styles ca. 5 mm long, densely villous. Achenes compressed, ovate, ca. 4 × 2 mm, puberulous; persistent styles 2.3–4.5 cm long, plumose. Fl. Aug. – Oct.

China (SE Gansu, N Guizhou, W Hubei, NW Hunan, S Shaanxi, N & SE Sichuan). In bushes on slopes or by streams; 200–1700 m.

Additional specimens examined. **China. Gansu (甘肃)** : Wen Xian (文县), Y. Q. He 1096, Z. Y. Zhang 13901 (PE); Hui Xian (徽县), Z. P. Wei 2019 (WUK). **Hubei (湖北)** : Hefeng (鹤峰), H. J. Li 8164 (PE); Badong (巴东), Henry 2483 (K), M. Z. Qian 1690 (PE); Yichang (宜昌), Henry 1062A, 2619 (K, US), 3092 (LE, P); Xingshan (兴山), H. J. Li 1797 (PE); Shennongjia (神农架), Sino-Amer. Exped. 1439 (GH); Zhushan (竹山), Z. E. Zhao 5295 (PE); Zhuxi (竹溪), P. Y. Li 9994 (WUK); Without precise locality, Henry 4330 (G). **Hunan (湖南)** : Shimen (石门), L. H. Liu 17908 (HNNU); Sangzhi (桑植), M. Q. Xia 1080 (HUTM). **Shaanxi (陕西)** : Lüeyang (略阳), C. L. Tang 686 (WUK); Mian Xian (勉县), K. T. Fu 5596 (PE); Zhenba (镇巴), K. T. Fu 11610 (WUK); Langao (岚皋), K. T. Fu 12139 (WUK). **Sichuan (四川)** : Pingwu (平武), ?11180 (PE); Guangyuan (广元), P. Y. Li 973 (PE); Wuxi (巫溪), G. H. Yang 59496, 65216 (PE); Wushan (巫山), G. H. Yang 59892 (PE); Chengkou (城口), Farges s. n. (LE, P), T. L. Dai 102289, 104558 (PE); Liangping (梁平), C. W. Yuan s. n. (PE); Nanchuan (南川), F. T. Wang 10431, G. F. Li 64958 (PE).

**11. *Clematis grandidentata* (Rehd. & Wils.) W. T. Wang in Acta Phytotax. Sin. 31 (3) : 218. 1993 ; M. C. Chang et al. , List Pl. East China 163. 1993 ; W. T. Wang in Keys Vasc. Pl. Wuling Mount. 167. 1995 ; K. M. Liu in Fl. Hunan 2 : 694. 2000 ; Grey-Wils. , Clematis 40. 2000 ; W. T. Wang in Fl. Yunnan. 11 : 216. 2000 ; W. T. Wang & Barth. in Fl. China 6 : 348. 2001. — *C. grata* Wall. var. *grandidentata* Rehd. & Wils. in Sarg. , Pl. Wils. 1 : 338. 1913. Type : China. Hubei (湖北) : Badong (巴东), 1000–1600 m, 1907-05, E. H. Wilson 110 (holotype, GH!; isotype, K!); Xingshan (兴山), E. H. Wilson 338 (paratype, GH!); Fang Xian (房县), E. H. Wilson 427, 427a (paratypes, GH!). Sichuan (四川) :**

Washan (瓦山), E. H. Wilson 1100 (paratype, GH!); Wenchuan (汶川), E. H. Wilson 1233 (paratype, GH!); Kangding (康定), Pratt 78 (paratype, GH!); Mt. Emei (峨眉山), E. H. Wilson 4697 (paratype, GH!). Shaanxi (陕西): Hanzhong (汉中), Purdom 381 (paratype, GH!); Mt. Taibaishan (太白山), Purdom 1 (paratype, GH!).

*C. grata* auct. non Wall. : Maxim. in Mél. Biol. 9 : 592. 1876 ; Forb. & Hemsl. in J. Linn. Soc. Bot. 23 : 3. 1886 ; Franch. , Pl. David. 2 : 1. 1885 ; et Pl. Delav. 4. 1889 ; Maxim. in Acta Hort. Petrop. 11 : 9. 1890 ; Pritz. in Bot. Jahrb. 29 : 333. 1900 , cum f. *glabrata* Pritz. ; Yang et al. in J. Taiwan Mus. 44 (1) : 148. 1991 , p. p. quoad specim. e Sichuan lectum.

*C. grata* Wall. var. *argentilucida* auct. non (Lévl. & Van.) Rehd. : Hand.-Mazz. in Acta Hort. Gotob. 13 : 216. 1939.

*C. argentilucida* W. T. Wang in Acta Phytotax. Sin. 6 (4) : 387. 1957 , non *C. vitalba* L. var. *argentilucida* Lévl. & Van. : Anonymous in Iconogr. Corm. Sin. 1 : 752 , fig. 1503. 1972 ; Anonymous in Fl. Tsinling. 1 (2) : 297. 1974 ; Anonymous in Fl. Hupeh. 1 : 373. 1976 ; Ting in Fl. Reip. Pop. Sin. 28 : 196 , fig. 30. 1980 ; Ding et al. , Fl. Henan. 1 : 454. 1981 ; C. Y. Wu , Ind. Fl. Yunnan. 1 : 106. 1984 ; Y. K. Li in Fl. Guizhou. 3 : 62. 1986 ; X. W. Wang in Fl. Anhui 2 : 341. 1986 ; J. W. Wang in Fl. Hebei. 1 : 475. 1986 ; Z. H. Lin in Fl. Zhejiang 2 : 287. 1992 ; Y. J. Ling et al. in Fl. Shanxi. 1 : 651. 1992 ; L. Q. Li in Vasc. Pl. Hengduan Mount. 1 : 527. 1993 ; M. Johnson , Klematis 423. 1997 ; J. Q. Fu in Fl. Loe.-Plat. Sin. 1 : 453. 2000.

### 粗齿铁线莲

This species consists of two varieties ranging from Southwest China to East China.

#### 11a. var. *grandidentata* Fig. 7 : E , F

Woody vine. Branches shallowly ca. 6-sulcate , densely appressed-puberulous. Leaves pinnate , (3 – )5-foliate ; leaflets papery , ovate , broadly ovate , or elliptic , 3.5 – 8 ( – 10 )× 1.8 – 4.8 ( – 8 ) cm , at apex acuminate , long acuminate , or ovate , at base rounded , broadly cuneate , truncate , or subcordate , at margin coarsely few-dentate , undivided or 3-lobed , adaxially sparsely appressed-puberulous , abaxially densely puberulous , sometimes velutinous or sparsely puberulous , basal veins abaxially nearly flat or slightly prominent ; petioles 2.5 – 7 cm long. Cymes axillary and terminal , 3 – 20-flowered , axillary ones usually 3 – 6-flowered ; peduncles 2 – 6 cm long ; bracts linear or narrowly lanceolate , 0.5 – 1 cm long , or sometimes foliaceous. Flower 1.6 – 3 cm in diam. ; pedicel 1.2 – 3 cm long , densely puberulous. Sepals 4 – 5 , white , obovate-oblong , 10 – 15 × 2.5 – 5 mm , at apex obtuse , inside glabrous or sparsely puberulous , outside densely appressed-puberulous , on margin velutinous. Stamens 7 – 10 mm long , glabrous ; anthers narrowly oblong , 1.2 – 2 mm long , at apex obtuse. Ovaries pubescent ; styles ca. 7 mm long , densely villous. Achenes compressed , broadly ovate or elliptic , 2.2 – 3 × 2 – 2.5 mm , more or less pubescent ; persistent styles 2 – 3.4 cm long , plumose. Fl. May – Aug.

China ( S Anhui , S Gansu , Guizhou , SW Hebei , W Henan , Hubei , NW Hunan , S Ningxia , S Shaanxi , S Shanxi , Sichuan , N Yunnan , W Zhejiang ). On slopes or in bushes ; 450 – 3000 m.

Additional specimens examined. **China. Anhui** (安徽) : Huangshan (黄山) , D. Q. Wang 3527 (ACM) ; Jinzhai (金寨) , X. S. Shen 1591 (ANUB) ; Yuexi (岳西) , Anhui Exped. 59-215 (PE). **Gansu** (甘肃) : Wen Xian (文县) , Z. Y. Zhang 8625 (WUK) ; Wudu (武都) , Z. Y. Zhang 1804 (WUK) ; Zhouqu (舟曲) , T. P. Wang 14667 (PE) ; Min Xian (岷县) , T. P.

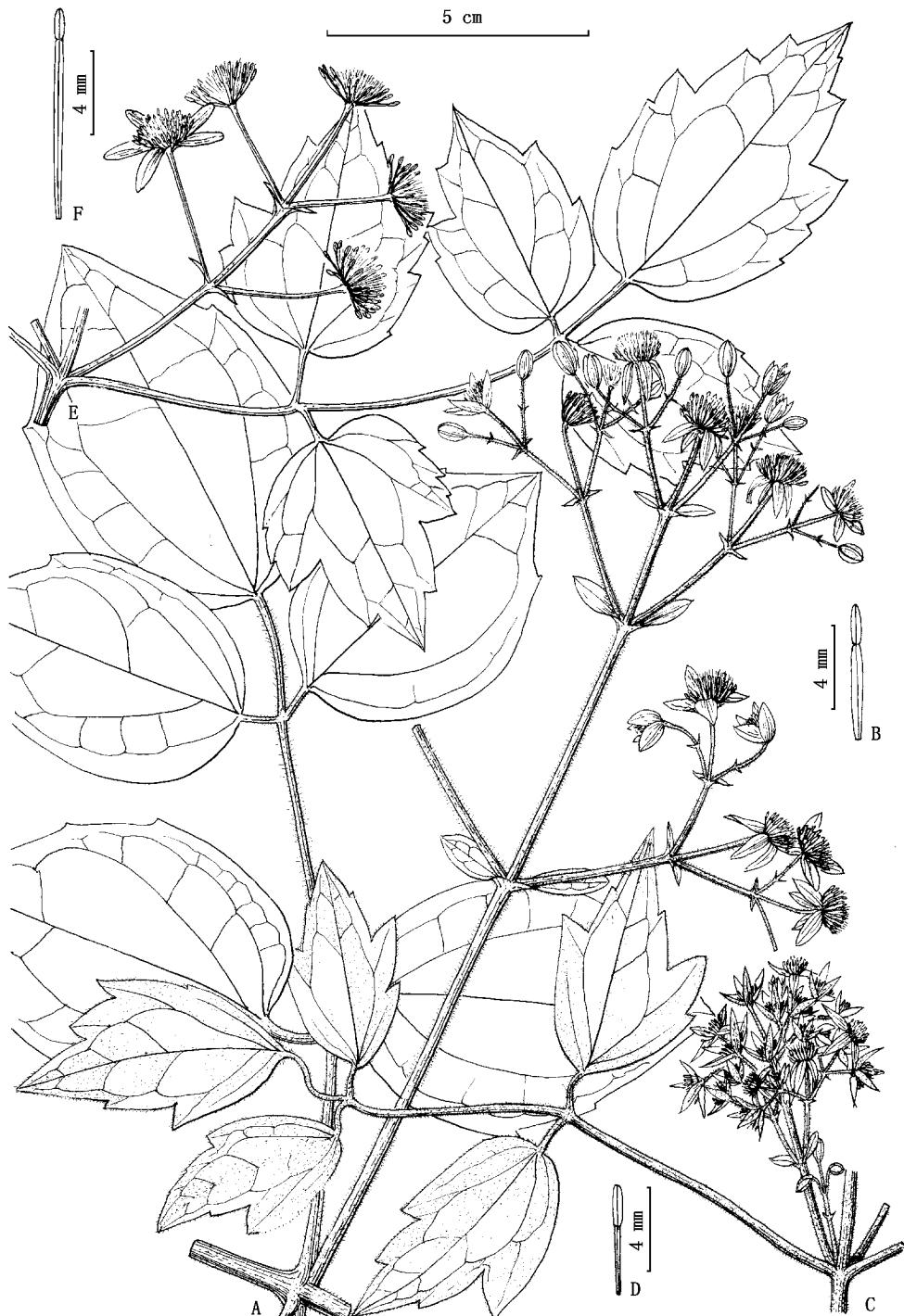


Fig. 7. A, B, *Clematis chingii* W. T. Wang. A, flowering branch; B, stamen. (from Z. Y. Cao 615) C, D, *C. pycn coma* W. T. Wang. C, flowering branch; D, stamen. (from Maire s. n.) E, F, *C. grandidentata* (Rehd. & Wils.) W. T. Wang var. *grandidentata*. E, flowering branch; F, stamen. (from Sino-Russ. Exped. 21884)

Wang 4578 ( PE ); Wushan ( 武山 ), Huanghe Exped. 56-4447 ( PE ); Lianhuashan ( 莲花山 ), Z. Z. Cheng s. n. ( PE ); Tianshui ( 天水 ), K. M. Liou 10224 ( PE ); Qingshui ( 清水 ), J. X. Yang 6858 ( WUK ); Huating ( 华亭 ), T. P. Wang 16932 ( PE ); Chongxin ( 崇信 ), S. Q. Zhong 82 ( PE ); Pingliang ( 平凉 ), Shan-gan Exped. 53-10223 ( PE ). **Guizhou** ( 贵州 ): Shuicheng ( 水城 ), G. Z. Huang 75 ( GZTM ); Dafang ( 大方 ), Bijie Exped. 59-835 ( HGAS , PE ); Tongzi ( 桐梓 ), D. Y. Chen 255 ( GZTM ); Dejiang ( 德江 ), P. C. Tsoong 668 ( PE ). **Hebei** ( 河北 ): Neiqiu ( 内丘 ), Y. Liu 13065 ( PE ). **Henan** ( 河南 ): Lushi ( 卢氏 ), K. M. Liou 5187 ( PE ); Song Xian ( 嵩县 ), Henan Exped. 59-34756 ( PE ); Xin Xian ( 新县 ), Henan Exped. 59-1111 ( PE ). **Hubei** ( 湖北 ): Hefeng ( 鹤峰 ), F. S. Peng 621 ( PE ); Enshi ( 恩施 ), M. Y. Fang 24304 ( PE ); Xuan 'en ( 宣恩 ), H. J. Li 5049 ( PE ); Jianshi ( 建始 ), W. B. Lin 111 ( PE ); Yichang ( 宜昌 ), Henry 1738 ( G-Bois. , K , LE ); Badong ( 巴东 ), H. C. Chow 897 ( GH , PE ); Huan Tsao , W. Y. Chun 4129 ( GH ); Zan-lan-scian , Silvestri 3938 ( GH ). **Hunan** ( 湖南 ): Longshan ( 龙山 ), L. H. Liu 1811 ( PE ); Cili ( 慈利 ), C. L. Peng 86310 ( ZJFC ). **Ningxia** ( 宁夏 ): Jingyuan ( 泾源 ), Jingyuan Exped. 64-103 ( PE ). **Shaanxi** ( 陕西 ): Huanglong ( 黄龙 ), J. X. Yang 5857 ( WUK ); Tongchuan ( 铜川 ), C. L. Xiao 398 ( WUK ); Long Xian ( 隆县 ), Y. Y. Pai 1916 ( WUK ); Taibaishan ( 太白山 ), Purdom 1 ( K ), T. P. Wang 1368 ( PE ); Nanwutaishan ( 南五台山 ), Huanghe Exped. 177 ( PE ); Zhongnanshan ( 终南山 ), H. W. Kung 2476 ( PE ); Huashan ( 华山 ), T. N. Liou 10772 ( PE ); Zhouzhi ( 周至 ), P. C. Kuo 1332 ( PE ); Mei Xian ( 眉县 ), J. X. Yang 3809 ( WUK ); Danfeng ( 丹凤 ), K. T. Fu 13275 ( WUK ); Shanyang ( 山阳 ), S. B. He 983 ( WUK ); Liuyang ( 略阳 ), G. Y. Li 323 ( WUK ); Mian Xian ( 勉县 ), Z. Y. Zhang 18945 ( WUK ); Ningshan ( 宁陕 ), J. Q. Xing 1638 ( WUK ); Shiquan ( 石泉 ), J. Q. Xing 10140 ( WUK ); Pingli ( 平利 ), P. Y. Li 1515 ( PE ); Langao ( 岚皋 ), P. Y. Li 8257 ( WUK ). **Shanxi** ( 山西 ): Yongji ( 永济 ), T. W. Liu 173 ( PE ); Ruicheng ( 芮城 ), S. Y. Bao 822 ( PE ); Xia Xian ( 夏县 ), T. W. Liu 372 ( PE ); Yuanqu ( 垣曲 ), S. Y. Bao 2011 ( PE ); Lingchuan ( 陵川 ), K. M. Liou 7604 ( PE ); Yicheng ( 翼城 ), X. Y. Liu 20327 ( PE ); Huo Xian ( 霍县 ), T. P. Wang 3925 ( PE ), Licent 11785 ( GH ); Jiexiu ( 介休 ), K. M. Liou 1273 ( PE ); Zhongyang ( 中阳 ), Zhongyang Exped. 55-33 ( PE ); Lishi ( 离石 ), Huanghe Exped. 2313 ( PE ). **Sichuan** ( 四川 ): Mabian ( 马边 ), F. T. Wang 23042 ( GH , LE , PE ); Leibo ( 雷波 ), T. T. Yü 3403 ( PE ); Kangding ( 康定 ), Pratt 78 ( G , K , P ); Emeishan ( 峨眉山 ), W. P. Fang 12938 , Sino-Russian Exped. 21884 ( PE ); Erlangshan ( 二郎山 ), W. K. Hu 34659 , X. L. Jiang 34828 ( PE ); Wenchuan ( 汶川 ), F. T. Wang 21090 ( PE ); Mao Xian ( 茂县 ), F. T. Wang 22015 ( PE ); Baoxing ( 宝兴 ), K. L. Chü 3885 ( K , P , PE ), Z. P. Song 39221 ( PE ); Tianquan ( 天全 ), K. L. Chü 2713 ( K , PE ); Heishui ( 黑水 ), X. Li 73252 ( PE ); Songpan ( 松潘 ), W. P. Fang 1380 ( GH ), K. T. Fu 2096 ( PE ); Wanyuan ( 万源 ), P. Y. Li 5810 ( PE ); Chengkou ( 城口 ), Farges 320 ( G , K , LE , P ), T. L. Dai 100466 ( PE ); Wushan ( 巫山 ), T. P. Wang 10631 ( PE ); Wuxi ( 巫溪 ), G. H. Yang 58455 ( PE ); Xingwen ( 兴文 ), Yibin Exped. 59-347 ( PE ); Nanchuan ( 南川 ), W. P. Fang 1380 ( GH , PE ), G. F. Li 62260 ( PE ); Youyang ( 酉阳 ), Youyang Exped. 59-2679 ( PE ). **Yunnan** ( 云南 ): Lijiang ( 丽江 ), Forrest 5566 ( PE ), Z. H. Yang 101782 ( PE ); Kunming ( 昆明 ), C. W. Wang 63023 ( PE ); Suijiang ( 绥江 ), B. X. Sun 405 ( PE ); Yiliang ( 犀良 ), H. T. Tsai 52167 ( PE ); Daguan ( 大关 ), NE Yunnan Exped. 72-186 ( PE ); Yongshan ( 永善 ), H. T. Tsai 51108 ( GH , PE ); Kiu-tchong-chan , Maire 6339 ( LE ). **Zhejiang** ( 浙江 ): Tianmushan ( 天目山 ), S. F. Wu 82201 ( SHTU ).

**11b. var. *likiangensis*** (Rehd.) W. T. Wang in *Acta Phytotax. Sin.* 31(3):219. 1993; M. C. Chang et al., *List Pl. East China* 163. 1993; Grey-Wils., *Clematis* 40. 2000; W. T. Wang in *Fl. Yunnan.* 11:216. 2000; W. T. Wang & Barth. in *Fl. China* 6:348. 2001. — *C. grata* Wall. var. *likiangensis* Rehd. in *J. Arn. Arb.* 14:201. 1933; Hand.-Mazz. in *Acta Hort. Gotob.* 13:217. 1939. — *C. argentilucida* W. T. Wang var. *likiangensis* (Rehd.) W. T. Wang in *Acta Phytotax. Sin.* 6(4):388. 1957; Ting in *Fl. Reip. Pop. Sin.* 28:196. 1980; C. Y. Wu, *Ind. Fl. Yunnan.* 1:106. 1984; Y. K. Li in *Fl. Guizhou.* 3:62. 1986; Z. H. Lin in *Fl. Zhejiang* 2:288. 1992; L. Q. Li in *Vasc. Pl. Hengduan Mount.* 1:527. 1993; M. Johnson, *Klematis* 424. 1997. Type: China. Yunnan (云南): Lijiang (丽江), eastern slopes of Likiang Snow Range, 1922-05-10, Rock 3668 (holotype, GH!), 3918 (paratype, GH!; isoparatype, US!).

### 丽江铁线莲

Ovaries and achenes of this variety are glabrous.

China (S Anhui, Gansu, S Guizhou, SW Hebei, W Henan, W Hubei, S Shaanxi, SE Shanxi, SW Sichuan, NW Yunnan, NW Zhejiang). In bushes or sparse forests, on slopes, or by streams; 800–3400 m.

Additional specimens examined. **China. Anhui** (安徽): She Xian (歙县), X. P. Zhang 210 (ANUB). **Gansu** (甘肃): Licheng, R. C. Ching 286 (US). **Guizhou** (贵州): Anshun (安顺), Anshun Exped. 59-1022 (PE). **Hebei** (河北): She Xian (涉县), K. C. Kuan 5468 (PE); Wu 'an (武安), K. C. Kuan 5750 (PE). **Henan** (河南): Lushi (卢氏), K. M. Liou 5187 (K); Dengfeng (登封), Hers 296 (GH, K). **Hubei** (湖北): Shennongjia (神农架), G. X. Fu 1057 (PE); without precise locality, Henry 1738 (G). **Shaanxi** (陕西): Hanzhong (汉中), Purdom 381 (GH, US). **Shanxi** (山西): Changzhi (长治), Licent 11543 (PE); without precise locality, T. Tang 834 (GH, US). **Sichuan** (四川): Muli (木里), T. T. Yü 14158 (GH, PE), 5551 (PE); Jinyang (金阳), Liangshan Exped. 59-3278 (PE). **Yunnan** (云南): Yangbi (漾濞), R. C. Ching 22529 (PE); Lijiang (丽江), T. T. Yü 15067, Forrest 5566 (BM, K, P, PE, US); Zhongdian (中甸), T. T. Yü 11329, K. M. Feng 5929 (PE); Weixi (维西), C. W. Wang 67899 (GH, PE), K. M. Feng 3732 (PE); Dêqên (德钦), T. T. Yü 8315 (PE); Dongchuan (东川), Maire 3369 (LE).

**12. *Clematis trichotoma*** Nakai in *Bot. Mag. Tokyo* 26:323. 1912; T. B. Lee, *Ill. Fl. Korea* 345, fig. 1379, 1979; Y. N. Lee, *Fl. Korea* 168, fig. 495. 1996; M. Johnson, *Klematis* 454. 1997; Grey-Wils., *Clematis* 47. 2000. Type: Korea: Mt. Diamond, 1906-06, Faurie 141 (holotype).

*C. vitalba* auct. non L.: Lévl. in *Bull. Acad. Intern. Geogr. Bot.* 11:299. 1902; Nakai, *Fl. Korea* 1:10. 1911.

Fig. 6: A, B (see p. 21)

Woody vine. Branches shallowly 6-sulcate, appressed-puberulous, glabrescent. Leaves pinnate, 5-foliate, upper ones sometimes ternate; leaflets papery, ovate, rhombic, or elliptic, 3–7.8 × 2.2–2.5 cm, at apex acute or acuminate, at base rounded or broadly cuneate, at margin coarsely few-dentate, undivided or 3-lobed, on both surfaces sparsely appressed-puberulous, basal veins abaxially slightly prominent; petioles 4–7 cm long. Cymes axillary, (2–)3-flowered; peduncles 4–5 cm long, with pedicels puberulous; bracts narrowly oblong or elliptic, 0.9–1.9 cm long. Flower ca. 2.5 cm in diam.; pedicel 3.3–4 cm long. Sepals 4, oblong, 1.3–2 × 0.4–0.5 cm, at apex slightly acute, inside glabrous, outside densely appressed-puberulous, on margin

velutinous. Stamens 6–8 mm long, glabrous; anthers oblong, 1.7–2 mm long, at apex obtuse. Ovaries glabrous; styles ca. 6 mm long, densely villous. Achenes compressed, elliptic, subrhombic, or broadly ovate, 3.5–4.2 × 2.5–3 mm, glabrous, rugose; persistent styles 2.5–3 cm long, plumose. Fl. May.

Korea.

Specimens examined. **Korea.** Prov. Kogen, E. H. Wilson 9271 (GH), 10544 (K); Prov. Kangwon, Mt. Kumgang, Kondo 9032 (TI); Ponghwa Gun, March et al. 118 (MO); Koan-nyong, Nakai 1996 (GH); Naipiang, Faurie 5 (G).

**13. *Clematis pycnocoma* W. T. Wang, sp. nov.** Type: China. Yunnan (云南): Tcha-Ho, 2800 m, in bushes, 1913-11, Maire s. n. (holotype, here designated, G; isotype, P).

**密毛铁线莲** Fig. 7:C, D (see p. 25)

Species nova *C. chingii* W. T. Wang arcte affinis, sed foliolis supra puberulis subtus velutinis, indumento faciem abaxiale totam tegente, cymis densissimis subglobosis, pedunculis pedicellisque brevioribus, sepalis angustioribus anguste oblongis apice acutiusculis distinguitur.

Liana lignosa. Rami teretes, inconspicue 6-sulcati, cum petiolis pedunculis pedicellisque densissime adpresso luteolo-puberuli. Folia pinnata, 5-foliolata; foliola papyracea, rhombico-ovata, elliptico-ovata vel anguste ovata, 3.5–8 cm longa, 1.8–3.8 cm lata, apice acuta vel attenuata, basi rotundata, margine utrinque inaequaliter 1–2-dentata, vel 2–3-lobulata, vel indivisa, raro integra, supra dense adpresso puberula, subtus luteolo-velutina, nervis basalibus supra leviter impressis subtus prominulis; petioli 3–6 cm longi. Cymae axillares, unicae vel binatae valde inaequimagnae in axillis foliorum sitae, vulgo densissime 9–multi-florae, subglobosae; pedunculi 1–2 cm longi; bracteae lanceolatae vel lineares, 4–18 mm longae. Flos 1.2–1.7 cm diametro; pedicellus 5–7 mm longus. Sepala 4, patentia, anguste oblonga, 7–9 mm longa, 2–2.5 mm lata, apice acutiuscula, intus glabra, extus dense adpresso luteolo-puberula, ad marginem velutina. Stamina ca. 24, 3.5–5 mm longa, glabra, filamentis linearibus, antheris anguste oblongis 1.8–2.2 mm longis apice obtusis. Carpella ca. 9, ca. 4.5 mm longa, ovariis dense pubescens, stylis ca. 3.5 mm longis dense brunneolo-villosis.

Woody vine. Branches terete, indistinctly 6-sulcate, with petioles, peduncles and pedicels very densely yellowish-appressed-puberulous. Leaves pinnate, 5-foliolate; leaflets papery, rhombic-ovate, elliptic-ovate, or narrowly ovate, 3.5–8 × 1.8–3.8 cm, at apex acute or attenuate, at base rounded, at margin on each side unequally 1–2-dentate, or 2–3-lobulate, or undivided, seldom entire, adaxially densely appressed-puberulous, abaxially yellowish-velutinous, basal veins adaxially slightly impressed, abaxially slightly prominent; petioles 3–6 cm long. Cymes axillary, singly or in pair arising from one leaf axil, when in pair then strongly unequal in size, usually very densely 9–many-flowered, subglobose; peduncles 1–2 cm long; bracts lanceolate or linear, 4–18 mm long. Flower 1.2–1.7 cm in diam.; pedicel 5–7 mm long. Sepals 4, narrowly oblong, 7–9 × 2–2.5 mm, at apex slightly acute, inside glabrous, outside densely yellowish-appressed-puberulous, on margin velutinous. Stamens 3.5–5 mm long, glabrous; anthers narrowly oblong, 1.8–2.2 mm long, at apex obtuse. Ovaries densely pubescent; styles ca. 3.5 mm long, densely brownish-villous. Fl. Nov.

China (NE? Yunnan). In bushes; 2800 m.

**14. *Clematis chingii* W. T. Wang in Acta Phytotax. Sin. 6(4): 383, pl. 59, fig. 7. 1957; Anonymous in Iconogr. Corm. Sin. 1:752. 1972; Ting in Fl. Reip. Pop. Sin. 28; 199, pl. 60.**

1980; C. Y. Wu, Ind. Fl. Yunnan. 1:107. 1984; Y. K. Li in Fl. Guizhou. 3:64. 1986; W. T. Wang in Fl. Guangxi 1:288. 1991; et in Keys Vasc. Pl. Wuling Mount. 167. 1995; M. Johnson, Klematis 427. 1997; K. M. Li in Fl. Hunan 2:692. 2000; Grey-Wils., Clematis 38. 2000; W. T. Wang in Fl. Yunnan. 11:220. 2000; W. T. Wang & Barth. in Fl. China 6:348. 2001. Type: China. Guangxi (广西): Baise (百色), Bagoshan, 1000 m, 1928-09-14, R. C. Ching 7438 (holotype, PE!; isotypes, GH!, PE!, US!); Guilin (桂林), Dajiangyuan, W. T. Tsang 28253 (paratype, PE!). Guangdong (广东): Yangshan (阳山), T. M. Tsui 838 (paratype, PE!; isoparatypes, GH!, K!, MO!, US!).

两广钱线莲 Fig. 7:A, B (see p. 25)

Woody vine. Branches shallowly 7–8-sulcate, densely puberulous. Leaves pinnate, (3–)5-foliate; leaflets papery, ovate, broadly ovate, or elliptic, 4–8 × 1.5–6.5 cm, at apex acuminate or acute, at base rounded or subcordate, at margin few-dentate, seldom entire, undivided, seldom 3-lobed, adaxially strigose, abaxially densely puberulous, basal veins abaxially prominent; petioles 2.5–6 cm long, densely puberulous. Cymes axillary and terminal, (3–)10–many-flowered, often panicle-like; peduncles 2.2–8.5 cm long; bracts short petiolate, ovate or elliptic, 0.5–6 cm long. Flower 1.3–1.8 cm in diam.; pedicel 0.5–1.7 cm long, densely puberulous. Sepals 4, white, elliptic-oblong, oblong, or obovate-oblong, 7–9.5 × 2–4.5 mm, at apex obtuse, inside glabrous, outside densely velutinous. Stamens 3–6 mm long, glabrous; anthers narrowly oblong, 1.2–2 mm long, at apex obtuse. Ovaries puberulous; styles ca. 4 mm long, densely villous. Fl. Jul.–Sept.

China (N Guangdong, W Guangxi, SW Guizhou, W & S Hunan, SE Yunnan). In bushes on slopes; 200–1700 m.

Additional specimens examined. **China. Guangxi** (广西): Jingxi (靖西), C. C. Chang 14518 (IBK); Napo (那坡), C. C. Chang 14000 (IBK). **Guizhou** (贵州): Ceheng (册亨), Z. Y. Cao 615, 735 (PE). **Hunan** (湖南): Fenghuang (凤凰), Wulingshan Exped. 88-1433 (PE); Xinning (新宁), Y. B. Luo 3 (PE). **Yunnan** (云南): Malipo (麻栗坡), K. M. Feng 12935, Y. Z. Wang 3810, 4247 (PE).

**15. *Clematis tsaii*** W. T. Wang in Acta Phytotax. Sin. 6(4):382. 1957; Ting in Fl. Reip. Pop. Sin. 28:199, pl. 61. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1:114. 1984; W. T. Wang in Acta Bot. Yunnan. 8(3):269. 1986; L. Q. Li in Vasc. Pl. Hengduan Mount. 1:527. 1993; M. Johnson, Klematis 439. 1997; Grey-Wils., Clematis 38. 2000; W. T. Wang in Fl. Yunnan. 11:220. 2000; W. T. Wang & Barth. in Fl. China 6:348. 2001. Type: China. Yunnan (云南): Fugong (福贡), 2000 m, 1933-09-18, H. T. Tsai 54328 (holotype, PE!); same locality, H. T. Tsai 54976 (paratype, PE!); Jingdong (景东), M. K. Li 958 (paratype, PE!).

福贡铁线莲

Woody vine. Branches shallowly 5–6-sulcate, densely puberulous. Leaves pinnate; leaflets papery, elliptic-ovate or elliptic-oblong, seldom obliquely rhombic, 7–13 × 3–6 cm, at apex acuminate or acute, at base broadly cuneate or rounded, at margin entire, adaxially sparsely strigose, abaxially densely puberulous, basal veins abaxially prominent; petioles 3–8 cm long, densely puberulous. Cymes axillary and terminal, 9–many-flowered, often panicle-like; peduncles 4–12 cm long; bracts linear, 6–9 mm long. Flower ca. 1.7 cm in diam.; pedicel 0.9–2 cm long, densely puberulous. Sepals 4, white, obovate-oblong or oblanceolate, 7–9 × 2–4 mm, at apex obtuse, inside glabrous, outside velutinous. Stamens 6.2–8 mm long, glabrous; anthers

narrowly oblong, 1.3–1.5 mm long, at apex obtuse. Ovaries puberulous; styles ca. 5 mm long, densely villous. Achenes compressed, elliptic-ovate, 2.2–3×2 mm, pubescent; persistent styles 4.5–6.5 cm long, plumose. Fl. Sept. – Oct.

China (SE Xizang, Yunnan). On slopes or in forests; 1500–2000 m.

Additional specimens examined. **China. Xizang (西藏):** Mêdog (墨脱), B. S. Li & S. Z. Cheng 1290, 1336, 3349 (PE); Nyingchi (林芝), B. S. Li & S. Z. Cheng 1890 (PE). **Yunnan (云南):** Jingdong (景东), M. K. Li 998, B. Y. Qiu 52651 (PE); Simao (思茅), Henry 12444 (LE).

**16. *Clematis peterae* Hand.-Mazz. in Acta Hort. Gotob. 13:213. 1939; W. T. Wang in Acta Phytotax. Sin. 6(4):380. 1957; Anonymous in Iconogr. Corm. Sin. 1:751, fig. 1502. 1972; Anonymous in Fl. Tsinling. 1(2):298. 1974; Anonymous in Fl. Hupeh. 1:373. 1976; Ting in Fl. Reip. Pop. Sin. 28:194, fig. 29. 1980; Ding et al. in Fl. Henan. 1:453. 1981; C. Y. Wu, Ind. Fl. Yunnan. 1:112. 1984; Y. K. Li in Fl. Guizhou, 3:62. 1986; J. W. Wang in Fl. Hebei. 1:475. 1986; Y. J. Ling et al. in Fl. Shanxi. 1:647. 1992; L. Q. Li in Vasc. Pl. Hengduan Mount. 1:527. 1993; W. T. Wang in Keys Vasc. Pl. Wuling Mount. 166. 1995; M. Johnson, Klematis 437. 1997; J. Q. Fu in Fl. Loe.-Plat. Sin. 1:452. 2000; K. M. Liu in Fl. Hunan 2:689. 2000; Grey-Wils., Clematis 38. 2000; W. T. Wang in Fl. Yunnan. 11:216. 2000; W. T. Wang & Barth. in Fl. China 6:348. 2001. Type: China. Yunnan (云南): Dêqên (德钦), Tseku, Monbeig s. n. (lectotype, K! — here designated; isolectotype, P!); Lijiang (丽江), Schneider 1704, 2081, Handel-Mazzetti 3490 (syntypes, GH!). Sichuan (四川): Daxiangling (大相岭), H. Smith 13539 (syntype, UPS!). Shanxi (山西): Yangshuling, H. Smith 6178 (syntypes, GH!, UPS!).**

*C. vitalba* L. var. *microcarpa* Franch., Pl. Delav. 4. 1889. Type: China. Yunnan (云南): Tapintze, 1885-09-29, Delavay 2984 (holotype, P!).

*C. gouriana* Roxb. ex DC. var. *finetii* Rehd. & Wils. in Sarg., Pl. Wils. 1:339. 1913; Hand.-Mazz., Symb. Sin. 7:321. 1931; Pei in Sinensis 7:472. 1936; Rehd., Man. Cult. Tr. & Shr., ed. 2, 218. 1940. Type: China. Hubei (湖北): Xingshan (兴山), 1907-07, E. H. Wilson 672 (holotype, GH!; isotypes, K!, LE!).

*C. peterae* var. *mollis* W. T. Wang in Acta Phytotax. Sin. 6(4):382. 1957; Ting in Fl. Reip. Pop. Sin. 28:195. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1:112. 1984. Type: China. Yunnan (云南): Binchuan (宾川), 1946-10-14, T. N. Liou 21583 (holotype, PE!).

### 钝萼铁线莲

This species consists of three varieties ranging from Southwest China to Taiwan Province.

#### **16a. var. *peterae* Fig. 8: A–C**

Woody vine. Branches shallowly 5-sulcate, puberulous or glabrescent. Leaves pinnate, (3–) 5-foliolate; leaflets papery, elliptic-ovate or ovate, 2–9.5×0.9–4 cm, at apex acuminate or acute, at base truncate-rounded or rounded, at margin entire or on each side 1–3-dentate, undivided, on both surfaces sparsely puberulous or nearly glabrous, rarely densely puberulous, basal veins abaxially slightly prominent; petioles 1.5–5.4 cm long. Cymes axillary and terminal, few- to many-flowered; peduncles 1.3–3 cm long; bracts ovate or obovate, up to 1 cm long, or smaller, subulate, ca. 4 mm long. Flower 1–1.5 cm in diam.; pedicel 0.7–1.5 cm long, puberulous. Sepals 4, white, obovate-oblong or narrowly obovate, 6–8×2–4 mm, at apex obtuse, inside glabrous, outside puberulous or glabrous, on margin velutinous. Stamens 5.5–7 mm long,



Fig. 8. A - C, *Clematis petrae* Hand.-Mazz. var. *petrae*. A, flowering branch; B, stamen (from J. H. Xiong & Z. L. Zhou 92402) C, achene (from W. K. Hu & Z. He 11435). D, E, C. *vitalba* L. var. *vitalba*. D, flowering branch; E, stamen. (from Shulz s. n.) F - H, *C. gouriana* Roxb. ex DC. var. *gouriana*. F, flowering branch; G, stamen (from N Guizhou Exped. 59-2540) H, achene (from H. J. Li 1899).

glabrous; anthers narrowly oblong, ca. 1.5 mm long, at apex obtuse. Ovaries glabrous; styles ca. 5 mm long, densely villous. Achenes compressed, ovate or elliptic, 2–3.5×2 mm, glabrous; persistent styles (1–)2 cm long, plumose. Fl. May–Aug.

China (S Gansu, Guizhou, SW Hebei, SW & S Henan, W Hubei, W Hunan, S Shaanxi, S Shanxi, Sichuan, C & N Yunnan). In mixed forests or bushes, or by streams; 600–3400 m.

Additional specimens examined. **China. Gansu** (甘肃): Wen Xian (文县), Q. X. Li 2559 (PE); Zhouqu (舟曲), Z. Y. Zhang 2703 (WUK); Tebbu (迭部), Rock 14733 (GH, K); vico Tschagon, Potanin s. n. (LE); Tianshui (天水), W. Y. Hsia 5622 (PE). **Guizhou** (贵州): Xingyi (兴义), Anshun Exped. 59-814 (PE); Hezhang (赫章), P. H. Yü 1272 (PE); Bijie (毕节), H. T. Tsai 52757 (GH); Dafang (大方), Bijie Exped. 59-1201 (PE); Nayong (纳雍), Bijie Exped. 59-626 (PE); Pingba (平坝), Anshun Exped. 59-1449 (PE); Weng'an (瓮安), Libo Exped. 59-203 (PE); Meitan (湄潭), N Guizhou Exped. 59-2507 (PE); Shibing (施秉), Wulingshan Exped. 88-2579 (PE). **Hebei** (河北): Ci Xian (磁县), H. F. Chow 43255 (PE). **Henan** (河南): Lushi (卢氏), Henan Exped. 59-34229 (PE); Luanchuan (栾川), Henan Exped. 59-20132 (PE); Xixia (西峡), Henan Exped. 60-1011 (PE); Neixiang (内乡), Henan Exped. 60-860 (PE); Jigongshan (鸡公山), X. Q. Zhang 20155 (PE); Shangcheng (商城), Henan Exped. 59-258 (PE); Dengfeng (登封), Henan Exped. 59-51017 (PE); Hui Xian (辉县), Hers 715 (GH); Lin Xian (林县), Loe.-Plat. Exped. 861 (WUK). **Hubei** (湖北): Xianfeng (咸丰), Y. M. Wang 6182 (PE); Badong (巴东), Henry 2420 (LE); Xingshan (兴山), E. H. Wilson 672 (GH), H. J. Li 42 (PE); Shennongjia (神农架), Z. E. Zhao 4952 (HIB); Fang Xian (房县), K. R. Liu 429 (PE); Zhuxi (竹溪), P. Y. Li 5091 (PE). **Hunan** (湖南): Shimen (石门), L. H. Liu 17768 (HNNU); Sangzhi (桑植), Wulingshan Exped. 88-2737 (PE); Cili (慈利), X. Y. Xi 84179 (PE); Yongshun (永顺), L. H. Liu 9624 (PE); Fenghuang (凤凰), F. Z. Tian 18 (HUTM). **Shaanxi** (陕西): Pingli (平利), P. Y. Li 100073 (WUK); Ziyang (紫阳), P. Y. Li 4866 (PE); Shiquan (石泉), J. Q. Xing 7794, 9429, 10482 (WUK); Ningshan (宁陕), Z. W. Zhang 1807 (PE); Yang Xian (洋县), H. W. Kung 3527 (PE); Nanzheng (南郑), Z. X. Hu 812 (WUK); Hanzhong (汉中), J. W. Wang 138 (PE); Mian Xian (勉县), K. T. Fu 5593 (PE); Lüeyang (略阳), C. L. Tang 874 (WUK); Foping (佛坪), P. C. Kuo 1445 (PE); Zhen'an (镇安), X. X. Hou 769 (WUK); Shanyang (山阳), J. X. Yang 2866 (WUK); Taibaishan (太白山), Purdom s. n. (K); Zhongnanshan (终南山), Fenzel 414 (WUK); Baoji (宝鸡), J. X. Yang 950 (PE, WUK); Mei Xian (眉县), Z. Y. Zhang 17697 (WUK); Huashan (华山), T. N. Liou 10846 (PE); Heyang (合阳), Heyang Exped. 58 (WUK); Huanglong (黄龙), J. X. Yang 5962 (WUK). **Shanxi** (山西): Yongji (永济), T. W. Liu 12 (PE); Ruicheng (芮城), S. Y. Bao 1563 (PE); Yangcheng (阳城), Licent 1171 (K); Jincheng (晋城), K. M. Liou 7451 (PE); Lingchuan (陵川), K. M. Liou 7604 (PE). **Sichuan** (四川): Muli (木里), T. T. Yü 7198 (PE); Huili (会理), T. T. Yü 1609 (GH, PE); Jiulong (九龙), T. S. Ying 3987 (PE); Mianning (冕宁), S. K. Wu 2154 (PE); Yuexi (越西), Liangshan Exped. 59-3476 (PE); Meigu (美姑), Liangshan Exped. 59-1835 (PE); Leibo (雷波), T. T. Yü 3857 (PE); Shimian (石棉), C. J. Xie 42301 (PE); Hanyuan (汉源), S. Jiang 7718 (PE); Kangding (康定), Pratt 272 (K), Soulié 1502 (LE); Luding (泸定), C. S. Liu 631 (PE); Erlangshan (二郎山), X. L. Jiang 35054 (PE); Emeishan (峨眉山), K. C. Kuan et al. 1933 (PE); Baoxing (宝兴), K. C. Kuan, W. T. Wang et al. 2548 (PE); Li Xian (理县), Q. S. Zhao 41 (GH, PE),

UPS); Pingwu (平武), W. P. Fang 4207 (GH); Chengkou (城口), Farges 641 (LE, P), T. L. Dai 102029 (PE); Wushan (巫山), H. F. Zhou 109921 (PE); Jinyunshan (缙云山), Z. M. Huang 1011 (PE); Nanchuan (南川), W. P. Fang 599 (GH), J. H. Xiong 92775, G. F. Li 62999 (PE); Wulong (武隆), F. D. Pu 405 (PE); Youyang (酉阳), S. X. Tan 221 (PE). **Yunnan** (云南): Dêqêñ (德钦), Soulie 1502 (LE, P), Monbeig 30 (P), C. W. Wang 69221 (PE); Weixi (维西), K. M. Feng 4489 (PE); Lanping (兰坪), H. T. Tsai 53994 (PE); Zhongdian (中甸), T. T. Yü 10914 (PE); Lijiang (丽江), Schneider 1784, 2081 (G, K), Forrest 6048 (PE, US), C. W. Wang 65108, T. T. Yü 15328 (PE); Heqing (鹤庆), R. C. Ching 23561 (PE); Dali (大理), Schneider 2792 (G), H. C. Wang 1158 (PE); Binchuan (宾川), H. C. Wang 2520 (PE); Weishan (巍山), Sino-Amer. Exped. 84-883 (GH); Kunming (昆明), Ducloux 323, 2872, 2988 (P), T. N. Liou 13749 (PE); Songming (嵩明), P. I. Mao 127 (PE); Wuding (武定), J. S. Xin 13 (PE); Luquan (禄劝), P. Y. Mao 1598 (PE); Fumin (富民), B. Y. Qiu 6179 (PE); Dongchuan (东川), Maire s. n. (G, GH, K, P); Wenshan (文山), H. T. Tsai 51598 (PE); Xichou (西畴), Y. Q. Me 2360 (PE).

**16b.** var. *trichocarpa* W. T. Wang in Acta Phytotax. Sin. 6 (4): 381. 1957; Anonymous in Iconogr. Corm. Sin. 1: 751. 1972; Anonymous in Fl. Tsinling. 1 (2): 298. 1974; Ting in Fl. Reip. Pop. Sin. 28: 195. 1980; Anonymous in Fl. Jiangsu. 2: 172, fig. 997. 1982; C. Y. Wu, Ind. Fl. Yunnan. 1: 112. 1984; X. W. Wang in Fl. Anhui 2: 340, fig. 649. 1986; Z. H. Lin in Fl. Zhejiang 2: 288, fig. 2-380. 1992; L. Q. Li in Vasc. Pl. Hengduan Mount. 1: 527. 1993; W. T. Wang in Keys Vasc. Pl. Wuling Mount. 167. 1995; M. Johnson, Klematis 438. 1997; J. Q. Fu in Fl. Loe.-Plat. Sin. 1; 453. 2000; K. M. Liu in Fl. Hunan 2: 689. 2000; Grey-Wils., Clematis 38. 2000; W. T. Wang in Fl. Yunnan. 11: 218. 2000; W. T. Wang & Barth. in Fl. China 6: 349. 2001. Type: China. Shaanxi (陕西): Shanyang (山阳), Tianzhushan, 1900 m, 1952-09-03, T. P. Wang 16440 (holotype, PE!). K. Sichuan (四川): Guan Xian (灌县), W. P. Fang 6012 (paratype, PE!). Gansu (甘肃): Tianshui (天水), K. M. Liou 10131 (paratype, PE!). Henan (河南): Lushi (卢氏), K. M. Liou 4330 (paratype, PE!).

### 毛果钝萼铁线莲

Leaves pinnate. Ovaries and achenes puberulous.

China (S Anhui, S Gansu, W & S Henan, Hubei, NW Hunan, S Jiangsu, N Jiangxi, S Shaanxi, Sichuan, C Yunnan, W Zhejiang). On slopes or in bushes by streams; 600–1900 m.

Additional specimens examined. **China. Anhui** (安徽): She Xian (歙县), X. P. Zhang 1032 (ANUB). **Gansu** (甘肃): Kang Xian (康县), Z. Y. Zhang 16759 (WUK); Wen Xian (文县), Z. Y. Zhang 14413 (PE); inter Mor-pin et Wu-pin, Potanin s. n. (LE); Zhouqu (舟曲), Y. Q. He 689 (PE); Cheng Xian (成县), T. P. Wang 15000 (PE); Li Xian (礼县), T. P. Wang 4510 (PE); Tianshui (天水), W. Y. Hsia 5603 (PE). **Henan** (河南): Tongbai (桐柏), Forest. Exped. 56-799 (PE); Jigongshan (鸡公山), A. J. Li et al. 25 (PE); Song Xian (嵩县), Henan Exped. 60-1885 (PE); Lushi (卢氏), K. M. Liou 4369 (PE). **Hubei** (湖北): Zhuxi (竹溪), P. Y. Li 5091 (WUK); Fang Xian (房县), K. R. Liou 453 (PE); Wuchang (武昌), C. H. Qian 7651 (WUK). **Hunan** (湖南): Shimen (石门), Hupingshan Exped. A131 (PE); Hengshan (衡山), X. D. Zhang 811 (PE). **Jiangsu** (江苏): Danyang (丹阳), C. L. Tso 1822 (PE). **Shaanxi** (陕西): Zhenping (镇坪), T. S. Ying 91-74 (WUK); Ankang (安康), P. Y. Li 8808 (WUK); Ningqiang (宁强), P. Y. Li 835 (WUK); Lüeyang (略阳), C. L. Tang 1027 (WUK); Mian Xian (勉县), K. T. Fu 3859 (WUK);

Nanzheng (南郑), K. T. Fu 11344 (WUK); Xixiang (西乡), T. N. Liou & P. C. Tsoong 3958 (PE); Shiquan (石泉), J. Q. Xing 5343, 7941, 8456, 10062 (WUK); Ningshan (宁陕), Z. W. Zhang 1809 (WUK); Shanyang (山阳), T. P. Wang 16336 (PE); Danfeng (丹凤), S. B. He 243 (WUK); Foping (佛坪), K. T. Fu 4656 (PE); Feng Xian (凤县), K. T. Fu 13413 (WUK); Taibai (太白), P. C. Kuo 4818 (WUK); Zhouzhi (周至), X. M. Zhang 674 (WUK); Taibaishan (太白山), T. P. Wang 1487 (PE), K. T. Fu 8699 (WUK). **Sichuan** (四川): Batang (巴塘), Sichuan Exped. 72-1307 (PE); Emeishan (峨眉山), T. N. Liou 12277 (WUK); Tianquan (天全), W. K. Hu 11868 (PE); Wenchuan (汶川), F. T. Wang 21747 (PE); Dujiangyan (都江堰), W. P. Fang 6012 (PE); Li Xian (理县), Z. He 14318 (PE); Chengkou (城口), T. L. Dai 102126, 106463 (PE); Wushan (巫山), G. H. Yang 59924 (PE). **Yunnan** (云南): Anning (安宁), T. N. Liou 17227 (PE); Mile (弥勒), Henry 10306 (LE). **Zhejiang** (浙江): Tiamushan (天目山), X. Y. He 25742 (HHBG, PE).

**16c.** var. *lishanensis* (T. Y. Yang & T. C. Huang) W. T. Wang in Acta Phytotax. Sin. 36 (2): 155. 1998; W. T. Wang & Barth. in Fl. China 6: 349. 2001. — *C. gouriana* Roxb. ex DC. ssp. *lishanensis* T. Y. Yang & T. C. Huang in J. Taiwan Mus. 44(1): 144, pl. 3. 1991; et in Taiwania 40(2): 219. 1995; et in Fl. Taiwan, ed. 2, 2: 521, pl. 243. 1996. — *C. peterae* ssp. *lishanensis* (T. Y. Yang & T. C. Huang) Grey-Wils., Clematis 38. 2000, nom. illegit. Type: China. Taiwan (台湾): Nantou (南投), E-W across Highway 103K, T. Y. Yang 2623 (holotype, TAI, not seen; isotype, K!); same locality, T. Y. Yang 2478, 2573, 2576, 2577 (isoparatypes, PE!); Taizhong (台中), Lishan, T. Y. Yang 4224, 4226 (isoparatypes, K!, PE!).

*C. taiwaniana* auct. non Hayata: T. S. Liu & Hsieh in Fl. Taiwan 2: 484. 1976.

### 梨山铁线莲

Leaves bipinnate, 9–15-foliolate; leaflets narrowly ovate, lanceolate, or ovate, at margin entire, abaxially sparsely puberulous. Sepals 7–10 × 4–5 mm, inside glabrous or nearly so, outside densely puberulous. Ovaries and achenes pubescent. Fl. Sept.–Nov.

China (C Taiwan). On slopes or at forest margins; 1200–2600 m.

**17. Clematis vitalba** L., Sp. Pl. 1: 544. 1753; Jacq., Fl. Austr. Ic. t. 308. 1775; All., Fl. Predm. 1: 297. 1785; Lam. & DC., Fl. Franc. 4(2): 872. 1805; Reichb., Fl. Germ. Excurs. 375. 1830–1832; et Ic. Fl. Germ. & Helvet. 19, t. 64. 1840; Moris, Fl. Sardoa 1: 13. 1837; Gren. & Godr., Fl. France 1: 4. 1848; Schur, Enum. Pl. Transsilv. 1. 1866; Boiss., Fl. Or. 1: 4. 1867; Koch, Dendr. 425. 1869; Mora, Fl. Fun. Penn. Iber. 6: 677. 1878; Willk. in Willk. & Lange, Prodr. Fl. Hispan. 3: 953. 1880; Acran., Comp. Fl. Ital. 2. 1882; Tristr., Fauna Fl. Palest. 207. 1884; Kuntze in Verh. Bot. Ver. Brand. 26: 99. 1885; Beck, Fl. Nied.-Osterr. 1: 411. 1890; Rouy & Fouc. in Fl. France 1: 4. 1893; Fritsch. in Verh. K. K. Zool.-Bot. Ges. Wien 44: 99. 1894; Posp., Fl. Oesterr. Küsten. 2: 69. 1898; Halacsy, Consp. Fl. Graec. 1: 2. 1901; Busch, Fl. Caucas. Crit. 3(3): 111. 1902; Schneid., Ill. Handb. Laubh. 2: 291, fig. 190. 1906; Hegi, Ill. Fl. Mitt.-Europ. 3: 511, fig. 663–664, t. 117. 1909–12; Briq., Prodr. Fl. Corse 1: 596. 1910; Bonn., Fl. Compl. Ill. France, Suisse et Belg. 12. 1912; Cout., Fl. Portug. 228. 1913; Schinz in Fl. Schweiz 2: 115. 1914; Fiori, Iconogr. Fl. Ital., ed. 2, 189, fig. 1529. 1921; Sander, Fl. Hungar. 568. 1924; Hayek, Prodr. Fl. Penn. Balcan. 1: 321. 1927; Szafera, Fl. Poliska 3: 26. 1927; Boul., Fl. Liban et Syrie 6. 1930; Post, Fl. Syria, Palest. & Sinai 1: 3. 1932; Krash. in

Kom. , Fl. URSS 7 : 320. 1937 ; Reching. , Fl. Aegaea 184. 1943 ; Nyar. in Fl. Reip. Pop. Roman. 2 : 538. 1953 ; Tutin in Fl. Europ. 1 : 221. 1964 ; Davis et al. , Fl. Turkey 1 : 138. 1965 ; Markova in Fl. Reip. Pop. Bulgar. 4 : 114. 1970 ; Zimmerm. in Hegi 's Ill. Fl. Mitt.-Europ. , ed. 2 , 3(3) : 184. 1975 ; Hess. et al. , Fl. Schweiz 2 : 60. 1977 ; Meikle , Fl. Cyprus 1 : 38. 1977 ; Futa & Bertova , Fl. Sloven. 3 : 361. 1982 ; Pignatti , Fl. Ital. 1 : 299. 1982 ; Carvn. in Castr. et al. , Fl. Iber. 1 : 269. 1986 ; Valdes in Valdes et al. , Fl. Vasc. Andaluc. Occ. 1 : 118. 1987 ; Serov in Bot. Zhurn. 73(12) : 1738. 1988 ; Reching. , Fl. Iran. 171 : 231. 1992 ; Laub. & Wagn. , Fl. Helv. 146. 1996 ; M. Johnson , Clematis 440. 1997 ; Luferov & Serov in Bot. Zhurn. 84(6) : 133. 1999 ; Grey-Wils. , Clematis 41. 2000. — *C. vitalba* ssp. *normalis* Kuntze in l. c. 101. — *C. vitalba*  $\alpha$  *typica* Beck , l. c. ; Hegi , l. c. 512. Lectotype : Southern Europe , Herb. Burser XVII : 35 (URS , fide Serov 1988 , not seen ).

*C. sepium* Lam. , Fl. Franc. 3 : 306. 1778. Type : unknown.

*C. dumosa* Salisb. , Prodr. Stirp. 371. 1796. Type : unknown.

*C. scandens* Borkh. , Handb. Forstbot. 2 : 1199. 1803. Type : unknown.

*C. vitalba* L. var. *integrata* DC. , Syst. 1 : 139. 1818 ; et Prodr. 1 : 3. 1824 ; Moris , Fl. Sardoa 1 : 11. 1837 ; Mora , Fl. Fun. Penn. Iber. 6 : 677. 1878 ; Kuntze in Verh. Bot. Ver. Brand. 26 : 101. 1885 ; Rouy & Fouc. , Fl. France 1 : 5. 1893 ; Briq. , Prodr. Fl. Corse 1 : 596. 1910 ; Schinz et al. , Fl. Schweiz 2 : 115. 1914 ; Luferov & Serov in l. c. 1999. — *C. vitalba* f. *integrata* (DC.) Pamp. , Fl. Repub. San. Marino 116. 1930 ; Nyar. in Fl. Reip. Pop. Roman. 2 : 538. 1953. Type : no type specimen designated.

*C. vitalba* var. *bannatica* Wierzb. ex Reichb. , Ic. Fl. Germ. et Helvet. 19. 1840. —

*C. bannatica* Schur in Verh. Siebenb. Ver. Nat.-Wiss. 4 : 7. 1853 ; et Enum. Pl. Transsilv. 1. 1866. Type : Romania. Banat , Jul. – Aug. 1837 , Keck 72 (holotype , WU !).

*C. crenata* Jord. in Billot , Annot. Fl. France et Allem. 12. 1855. — *C. vitalba* var. *crenata* (Jord.) Rouy & Fouc. , Fl. France 1 : 5. 1893 ; Briq. , Prodr. Fl. Corse 1 : 596. 1910 ; Markova in Fl. Reip. Pop. Bulgar. 4 : 114. 1970. Type : France : Nancy , Jordan s. n. (holotype , BM !).

*C. vitalba* var. *cordata* Schur , Enum. Pl. Transsilv. 1. 1866. Type : unknown.

*C. pilosa* Dulac , Fl. Haut.-Pyren. 211. 1867. Type : unknown.

*C. vitalba* var. *syriaca* Boiss. , Fl. Or. 1 : 4. 1867 ; Post , Fl. Syria , Palest. et Sinai 1 : 3. 1932. Type : Lebanon. Träblous (Tripoli) , 1856-10 , Blanche 1101 (holotype , G !).

*C. vitalba* var. *simplicifolia* Godet , Fl. Jura 1. 1869. — *C. vitalba* f. *simplicifolia* (Godet) Hegi , Ill. Fl. Mitt.-Europ. 3 : 512. 1909-12. Type : France. Jura , Reuter s. n. (holotype ).

*C. vitalba*  $\beta$  *radicans* Lièvere in Osterr. Bot. Zeitsch. 21 : 118. 1871. Type : unknown.

*C. vitalba*  $\gamma$  *prostrata* Lièvere in l. c. Type : unknown.

*C. odontophylla* Gand. , Fl. Lyonn. 38. 1875. Type : France. Lyon , 1872-08-22 , Gandoher 399 ( ?isotypes , G !, P !, S !).

*C. dumosa* Gand. l. c. 39. Type : France. Haies a Arnas , not seen.

*C. bellojicensis* Gand. l. c. 39. Type : France. Rhone : Montmelas , 1879-07-04 , Gandoher 400 (isotypes , G !, UPS !).

*C. transians* Gand. l. c. 39. Type : France. Rhone : Arnas , not seen.

*C. taurica* Bess. ex Nyman , Conspl. Fl. Europ. 1. 1878. — *C. vitalba* ssp. *taurica* (Bess.)

ex Nyman ) Kuntze in Verh. Bot. Ver. Brand. 26 : 100. 1885. — *C. vitalba* var. *taurica* ( Bess. ex Nyman ) Beck , Fl. Nied.-Osterr. 1 : 411. 1890 ; Rouy & Fouc. , Fl. France 1 : 5. 1893 ; Hegi , Ill. Fl. Mitt.-Europ. 3 : 512. 1909-12 ; Briq. , Prodr. Fl. Corse 1 : 596. 1910 ; Cout. , Fl. Portug. 228. 1913 ; Schinz in Schinz & Keller , Fl. Schweiz 2 : 115. 1914. — *C. vitalba* f. *taurica* ( Bess. ex Nyman ) Nyar. in Fl. Reip. Pop. Roman. 2 : 538. 1953. Type : unknown.

*C. vitalba* var. *vestita* Fritsch in Verh. K. K. Zool.-Bot. Ges. Wien 44 : 99. 1894 ; Rechinger. , Fl. Aegaea 184. 1943. Type : Austria , Tirol , 1893-07 , Adamovic s. n. ( holotype , WU ! ).

*C. vitalba* γ *dentata* Grec. , Consp. Fl. Rom. 22. 1898. Type : unknown.

*C. vitalba* var. *chrysostemon* Farvat ex Hegi , Ill. Fl. Mitt.-Europ. 3 : 512. 1909-12 ; Schinz in Schinz & Keller , Fl. Schweiz 2 : 115. 1914. Type : Switzerland. Brethonieres , 1888-07-12 , Meehalen s. n. ( ?holotype , G ! ).

This species is most variable in leaf margin and indumentum , consisting of two varieties widespread in southwestern Asia , central to southern Europe , and northern Africa ( Hansen , 1992 ).

**17a.** var. **vitalba** Fig. 8 : D, E ( see p. 31 )

Woody vine. Branches shallowly sulcate , appressed-puberulous. Leaves pinnate , 5-foliate ; leaflets papery , narrowly to broadly ovate ,  $2.5 - 9 \times 1.4 - 6$  cm , at apex acuminate or attenuate , at base rounded , truncate , or subcordate , at margin entire or 1 - few-dentate , undivided , rarely 1 - 2-lobulate , on both surfaces usually on veins sparsely puberulous , sometimes somewhat densely puberulous , basal veins abaxially slightly prominent ; petioles 3 - 8.5 cm long. Cymes axillary and terminal , 3 - many-flowered ; peduncles 3 - 9 cm long ; bracts short petiolate , ovate or elliptic , 1.2 - 3.5 cm long. Flower 1.6 - 2.2 cm in diam. ; pedicel 1 - 1.5 cm long , densely puberulous. Sepals 4 , white , narrowly oblong or obovate-oblong ,  $8 - 12 \times 1.8 - 3 - 4$  mm , at apex slightly obtuse , inside densely appressed-puberulous , outside usually velutinous. Stamens 7 - 8.5 mm long , glabrous ; anthers narrowly oblong or oblong , occasionally sublinear , 1.4 - 2 mm long , at apex obtuse , sometimes minutely apiculate. Ovaries densely puberulous ; styles 5 - 7 mm long , densely villous. Achenes compressed , elliptic or narrowly ovate ,  $4 - 4.5 \times 1.6 - 2.2$  mm , longitudinally rugose , pubescent ; persistent styles 2 - 4.5 mm long , plumose. Fl. Jun. - Aug.

SW Asia ( Azerbaijan , Cyprus , Georgia , Iran , Israel , Lebanon , Palestine , Syria , Turkey ) , C & S Europe ( Albania , Austria , Belgium , Bulgaria , Czech , France , Germany , Greece , Hungaria , Italy , Macedonia , Netherlands , Poland , Portugal , Romania , S Russia , Slovakia , Slovenia , Spain , Switzerland , United Kingdom , Ukraine , Yugoslavia ) , N Africa. In bushes or thickets , at forest margins , by streams or rivers , on walls and buildings.

Additional specimens examined. **Georgia.** Sochi , Vasak s. n. ( G ); Suchumi , Marcovicz 3674 ( PE ), Vasak s. n. ( G ). **Syria.** Mts. Amanus , Haradjian 4667 ( G ). **Turkey.** Anatolia , Schischkin s. n. ( LE ); Flavour , Aznavour 3a ( G ); Hedges , Post s. n. ( G ); Paphlagonia , Sintenis 4513 ( G , LE ); Samsun , Yildirimli 1156 ( G ); Therapia , Aznavour 3 ( G ). **Albania.** Llogora , X. P. Wang & A. M. Lu 304 ( PE ). **Austria.** Hallstatt , Anderberg 7325 ( S ); Salzburia , Gunnarsson s. n. ( S ); Wien , Wallnofer 4238 ( G , S ), Reitz s. n. ( UPS ). **Bulgaria.** Pleven , Cerneva 1009 ( S ); Mt. Slavjanka , Kuzmanov 802839 ( G ); Sofia , Segd et al. 197 ( S ); Vitosa , Vyhodcevski 632 ( G ). **France.** Alpes-Maritimes , Faust s. n. ( G ); Bretagne , Klackenberg 870825 ( S ); Corsica , Kendmeyer s. n. ( G ); St.-Laurent. Burclet s. n. ( G ); Vermand , Hibon 64 ( P ). **Germany.** Buchenreg , Gugelberg 48 ( G ); Pommern , Grapengiesser s. n. ( S );

Pommelsbrum, Meister 1319 (G); Würb, Gelin s. n. (UPS). **Greece.** Chalcidice, Ballalas s. n. (S); Drama, Franzen 795 (G); Epirus, Greuter 14464 (G); Grevenon, Hartvig 4751 (G); Phthiotidis, Heldreich s. n. (G). **Hungary.** Ofen, Luiheld s. n. (S); Sokova, Steinitz s. n. (S). **Italy.** Campania, Tellanda 6 (S); Roma, Rainba 2513 (S); Sicilia, Segelberg 14758 (S). **Macedonia**, Podlech 28107 (G). **Poland.** Lublin: Novo-Alexandria, Zinger 2917 (PE, S). **Portugal.** Alcobaca, Rainha 2513 (UPS); Coimbra, Cardoso s. n. (UPS). **Romania.** Borsani, Mititelu et al. 248 (PE); Crisana, Forstner 2213 (PE). **Spain.** Asturia, Gelin s. n. (UPS); Barcelone, Sennen 6283 (G); Granada, Guardia 402 (G); Jaen, Valdes et al. 2111-88 (G); Santaoder, Lange s. n. (S). **Switzerland.** Eichberg, Shulz s. n. (S); Geneva, Ayasse s. n. (G); Molasse, Koch s. n. (S); Ticino, Norman s. n. (UPS); Vevey, Cavin s. n. (G). **U.K.** Surrey, Melderis 146 (S, UPS); Bristd, White s. n. (UPS). **Ukraine.** Kiev, Chernous s. n. (S). **Yugoslavia.** Montenegro, Lundqvist 14940 (S).

**17b.** var. *angustiloba* Schur, Enum. Pl. Transsilv. 1. 1866. Type: described from Transylvania, Romania, no type specimen designated.

*C. vitalba* L. var. *angustisecta* Greml, Neu. Beitr. Fl. Schweiz. 4:1. 1887; Hegi, Ill. Fl. Mitt.-Europ. 3:512. 1909-12; Schinz in Schinz & Keller, Fl. Schweiz 2:115. 1914; Zimmerm. in Hegi's Ill. Fl. Mitt.-Europ., ed. 2, (3):184. 1975. Type: Switzerland. Lausanne, 1887-08-28, Tonduz s. n. (holotype, G!).

*C. vitalba* var. *timbali* Drabble in J. Bot. 70:84. 1932. Type: U. K. Thorley, Isle of Wight, 1931-08, Drabble s. n. (holotype, Herb. Drabble).

Leaflets lanceolate or lanceolate-linear, 5-12 x 1-4.2 cm, at margin few-dentate or subentire.

France, Romania, Switzerland, U.K.

Additional specimens examined. **France.** Toulouse, Timbal-Layrave s. n. (P). **Switzerland.** Rosiaz: Mts. Lavaccae, 583 m, Tonduz 438 (G).

**18. *Clematis gouriana* Roxb.** [Hort. Bengal. 43. 1814, nom. nud.] ex DC., Syst. 1:138. 1818; et Prodr. 1:3. 1824; Roxb., Fl. Ind. 2:670. 1832; Hook. f. & Thoms., Fl. Ind. 8. 1855; et in Hook. f., Fl. Brit. Ind. 1:4. 1872; Kurz, For. Fl. Brit. Burma 1:16. 1877; Burkhill in Rec. Bot. Rev. Ind. 4:97. 1910; Rehd. & Wils. in Sarg., Pl. Wils. 1:339. 1913; Rehd. in J. Arn. Arb. 10:188. 1927 et 17:318. 1936; Hand.-Mazz. in Acta Hort. Gotob. 13:213. 1939; Gupta in Bull. Nat. Bot. Gard. Lucknow 54:pl. 40. 1961; Kapoor in l. c. 74:22. 1962; Lauener & Green in Not. R. Bot. Gard. Edinb. 23(4):581. 1961; Anonymous in Fl. Hupeh. 1:370. 1976; Hara in Hara & Williams, Enum. Flow. Pl. Nepal 2:14. 1979; Ting in Fl. Reip. Pop. Sin. 28:191, pl. 59. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1:109. 1984; Grierson & Long, Fl. Bhutan 1(2):290. 1984; Trimen, Handb. Fl. Ceylon 1:2. 1984; Y. K. Li in Fl. Guizhou. 3:61. 1986; Riedl & Nasir in Fl. Pakist. 193:86, fig. 16:D-E. 1991; W. T. Wang in Fl. Guangxi 1:288. 1991; L. Q. Li in Vasc. Pl. Hengduan Mount. 1:526. 1993; Rau in Sharma et al., Fl. Ind. 1:64. 1993; W. T. Wang in Keys Vasc. Pl. Wuling Mount. 167. 1995; M. Johnson, Klematis 428. 1997, p. p. excl. syn. *C. floribunda* Kurz et *C. subumbellata*; K. M. Liu in Fl. Hunan 2:692. 2000; Grey-Wils., Clematis 38. 2000; W. T. Wang in Fl. Yunnan. 11:218. 2000; W. T. Wang & Barth. in Fl. China 6:349. 2001. — *C. vitalba* L. ssp. *gouriana* (Roxb. ex DC.) Kuntze in Verh. Bot. Ver. Brand. 26:100. 1885. — *C. vitalba* var. *gouriana* (Roxb. ex DC.) Finet & Gagnep. in Bull. Soc. Bot.

France 50 :532. 1903 ; et in Fl. Gén. Indo-Chin. 1 :5. 1907 ; Gagnep. , Suppl. Fl. Gén. Indo-Chin. 1 :4. 1938 ; Ho, Ill. Fl. Vietnam 1 :319 , fig. 1284. 1999. Type : E India , Roxburg s. n. ( holotype , BM , not seen ; isotype , K !).

*C. cana* Wall. Cat. n. 4672. 1828 , nom. nud.

*Atragene indica* Heyne ex Steud. , Nom. Bot. , ed. 2 , 168. 1841 , nom. nud.

*A. japonica* Wight ex Steud. l. c. , nom. nud.

*Clematis vitalba* ssp. *gouriana* var. *acuminatissima* Kuntze in l. c. Type : Sri Lanka , Walker s. n. ( syntype , K !).

*C. substipulata* Kuntze in l. c. 147. Type : India , 1840 , Perrottet 174 ( syntype , K !).

### 小蓑衣藤

This species consists of two varieties , wide-spread in subtropical and tropical regions of southern Asia , northwards extending to the central reaches of the Yangtze River of China.

**18a. var. *gouriana*** Fig. 8 :F – H ( see p. 31 )

Woody vine. Branches shallowly 5-sulcate , puberulous or glabrescent. Leaves pinnate , 5-foliate , seldom bipinnate or biternate ; leaflets papery or thinly coriaceous , narrowly ovate , lanceolate , or ovate ,  $2.4 - 10.5 \times 1.2 - 5.5$  cm , at apex attenuate or acuminate , at base rounded or subcordate , at margin entire , rarely 1-denticulate , on both surfaces glabrous or only on midrib sparsely puberulous , basal veins abaxially prominent ; petioles 1 – 7 cm long. Cymes axillary and terminal , 9 – many-flowered , often panicle-like ; peduncles 1.2 – 7 cm long ; bracts triangular or ovate , 0.4 – 1 cm long , or foliaceous. Flower 0.7 – 1 cm in diam. ; pedicel 6 – 12 mm long , puberulous. Sepals 4 , white , narrowly obovate or obovate-oblong ,  $5 - 6 \times 1.8 - 2$  mm , at apex obtuse or truncate , inside sparsely puberulous , outside usually densely puberulous , on margin velutinous. Stamens 3 – 4.5 mm long , glabrous ; anthers narrowly oblong , 1.1 – 1.5 mm long , at apex obtuse. Ovaries pubescent ; styles 3 – 3.8 mm long , densely villous. Achenes compressed , lanceolate or fusiform ,  $3 - 3.5 \times 1 - 1.5$  mm , appressed-puberulous ; persistent styles ca. 2 cm long , plumose. Fl. Sept. – Oct.

Bangladesh , Bhutan , China ( Guangdong , Guangxi , Guizhou , W. Hubei , W. Hunan , S. Shaanxi , Sichuan , C & S Yunnan ) , India , Laos , Myanmar , Nepal , Pakistan , Sikkim , Sri Lanka , Thailand , N. Vietnam. On slopes , in bushes , by streams ; 50 – 1800 m.

Additional specimens examined. **Bangladesh** , Griffith 5 ( K , S ). **Bhutan** . Samchi , Grierson & Long 2990 ( GH , K ). **China. Guangxi** ( 广西 ) : Baise ( 百色 ) , Baise Exped. 55-1079 ( PE ) ; Guilin ( 桂林 ) , S. C. Chen et al. 7 ( LE ). **Guizhou** ( 贵州 ) : Huang-tsao-pa , Cavalerie 4604 ( K ) ; Ceheng ( 册亨 ) , Z. Y. Cao 4500 ( PE ) ; Gan-chouen , Cavalerie 383 ( K ) , 4262 ( K , P ) ; Gan-pin , Martin & Bodinier 1884 ( P ) ; Langdai ( 郎岱 ) , Y. Tsiang 9520 ( PE , S ) ; Qingzhen ( 清镇 ) , Chuanqian Exped. 56-1933 ( PE ) ; Guiyang ( 贵阳 ) , Chuanqian Exped. 56-2313 ( PE ) ; Maotai ( 茅台 ) , P. C. Tsoong 65 ( PE ) ; Weng 'an ( 瓮安 ) , Libo Exped. 59-1941 ( PE ) ; Meitan ( 湄潭 ) , N. Guizhou Exped. 59-2540 ( PE ) ; Zunyi ( 遵义 ) , Chuanqian Exped. 56-1602 ( PE ) ; Dejiang ( 德江 ) , Z. C. Zhao 88-2645 ( PE ). **Hubei** ( 湖北 ) : Enshi ( 恩施 ) , H. C. Chow 1903 ( PE ) ; Xuan 'en ( 宣恩 ) , Y. M. Wang 5198 ( PE ) ; Badong ( 巴东 ) , Q. L. Chen et al. 1865 ( PE ) ; Yichang ( 宜昌 ) , Henry 2946 , 3128 , 3132 ( K , P ) , 3090 ( GH , K ) , 4329 ( G , GH , K , US ) ; Xingshan ( 兴山 ) , H. J. Li 1899 ( PE , WUK ) ; without precise locality , E. H. Wilson 1706 ( GH , LE , P , US ) , 2397 ( GH ). **Hunan** ( 湖南 ) : Dao Xian ( 道县 ) , S. F. Wu 9031 ( SHTU ) ; Baojing ( 保靖 ) , L. H. Liu 9959 ( PE ) ; Fenghuang ( 凤凰 ) , Wulingshan Exped. 88-

1338 (PE); Yongshun (永顺), Hunan Exped. 53-483 (PE); Yuanling (沅陵), P. C. Tsoong 1438 (PE). **Shaanxi** (陕西): Langao (岚皋), Z. P. Wei 408 (WUK); Nanzheng (南郑), T. P. Wang 20673 (WUK). **Sichuan** (四川): Muli (木里), T. T. Yu 6364 (PE); Emeishan (峨眉山), E. H. Wilson 3130 (K), 4694 (GH, K), G. H. Yang 57117 (PE); Baoxing (宝兴), K. C. Kuan, W. T. Wang et al. 2548 (PE); Nanping (南坪), P. C. Li 74 (PE); Chengkou (城口), Farges 109 (P), T. L. Dai 103419 (PE); Wuxi (巫溪), G. H. Yang 65175 (PE); Hechuan (合川), C. J. Kiang 5334 (PE); Nanchuan (南川), F. T. Wang 10399, G. F. Li 62825 (PE). **Yunnan** (云南): Kunming (昆明), T. N. Liou 20026, 20177 (PE), Yanshan (砚山), C. W. Wang 83616 (PE); Mengzi (蒙自), Henry 9104, 10148 (GH, K, LE, US), Hancock 232 (K), C. W. Wang 81250 (PE); Simao (思茅), Henry 12444, 13432 (GH). **India**. Garhwal, Falconer 4 (K, LE), Prain s. n. (GH); Kumaon, Strachy & Winterbottom 9 (GH, K); Punjab, Thomson 1089 (P), Aitchison 1001 (K), Koelz 10326 (GH), Stewart 913 (K), 7586 (GH); Simla, Drummond 232 (K); Assam, Bor 6698, Parry 372 (K); Manipur, Bullock 750 (K, P), F. Kingdon Ward 17004 (GH); Sambalpur, Mooney 3195, 4226 (K); Bombay, Talbot 5102 (K), Dalzell s. n. (K), Fernandes 603 (GH); Concan, Law s. n. (G, LE); Mysore, Raghavan 86421 (K); Nilgiri Hills, Wright 1, Gamble 21434, Thomson s. n. (K), Perrottet 3, Metz 1121 (P), Prain s. n. (GH); Travancore, Fernandes 311 (K). **Myanmar**. Makhaye, King's collector s. n. (GH); Meh Lui, Rock 2310 (GH); Laikaw, Khalil s. n. (US); Ngawchang Valley, F. Kingdon Ward 103 (GH). **Nepal**. Dhara Pani-Tambar, Hara 6300438 (GH); Chitwan, Tabata 7563 (GH); Panting, Stainton 8922 (GH); Pokhara, Stainton et al. 8959 (G); Butwal, Stainton et al. 8803 (UPS); Jajarkot, Polunin et al. 5718 (P). **Pakistan**. Gulpur, Mohd 27029 (GH). **Sikkim**, J. D. Hooker s. n. (GH), Anderson s. n. (G), Gamble 7506, 26301B (K). **Thailand**, Santisuk 920 (GH). **Vietnam**. Tonkin: Chapa, Petelot 5469 (P), 6427 (GH, P, US).

**18b.** var. **mollifolia** W. T. Wang, var. nov. Type: India. Nilgiri Hills. R. H. Beddome s. n. (holotype, here designated, LE). Malabar: Calpatta, 3500 ft., Erlanson 5266 (paratype, GH). Madras: Vizagapatam, Lushington s. n. (paratype, K); Kaiti, 7000 ft., 1883-11, Gamble 13156 (paratype, K). Mysore: Hassan, 1968-12-20, Saldanha 12058 (paratype, K).

A var. *gouriana* differt foliolis subtus tota facie dense adpresso-puberulis.

Leaflets on entire abaxial surface densely appressed-puberulous.

S India. On thickets; 900-2300 m.

**19. Clematis grata** Wall., Pl. As. Rar. 1:83, t. 98. 1830; Royle, Ill. Bot. Himal. Mount. 1:51. 1839; Walp. in Rep. Bot. Syst. 1:5. 1842; Hook. f. & Thoms., Fl. Ind. 1:7. 1885; et in Hook. f., Fl. Brit. Ind. 1:3. 1872; Finet & Gagnep. in Bull. Soc. Bot. France 50:532. 1903, p. p.; Schneid., Ill. Handb. Laubh. 1:290. 1906; Finet in J. de Bot., ser. 2, 1:17. 1907; Coventry, Wild Flow. Kashmir 1:1. 1923; Rehd., Man. Cult. Tr. & Shr., ed. 2, 218. 1940; Tamura in Acta Phytotax. Geobot. 15(1):17. 1953; Mukerjee in Bull. Bot. Surv. Ind. 1:139. 1959; Tamura in Kitam. Fl. Afghan. 123. 1960; Gupta in Bull. Bot. Gard. Lucknow 54:t. 10. 1961; Kapoor in I. c. 78:29. 1962; Tamura in Acta Phytotax. Geobot. 23:30. 1968; Hara in Hara & Williams, Enum. Flow. Pl. Nepal 2:14. 1979; W. T. Wang in Acta Bot. Yunnan. 5(2):163. 1983; Tamura in Acta Phytotax. Geobot. 37:155. 1986; Riedl & Nasir in Fl. Pakist. 193:88, fig. 17: A-C. 1991; T. Y. Yang & T. C. Huang in J. Taiwan Mus. 44(1):148. 1991, p. min. p., excl. specim. sinensis; Rau in Sharma et al., Fl. Ind.

1:65. 1993; M. Johnson, Klematis 430. 1997; Gaur, Fl. Garhwal Himal. 68. 1999; Grey-Wils., Clematis 39. 2000; W. T. Wang & Barth. in Fl. China 6:350. 2001. — *C. vitalba* L. ssp. *grata* (Wall.) Kuntze in Verh. Bot. Ver. Brand. 26:100. 1885. Type: India. Kumaon, R. Blinkworth s. n. (holotype, K).

*C. cordata* Royle, Ill. Bot. Himal. Mount. 1:51. 1839. Type: Jumboo between Lahore and Kashmir, Royle s. n. (holotype).

秀丽铁线莲 Fig. 9:D-F

Woody vine. Branches shallowly 4-5-sulcate, densely puberulous. Leaves pinnate, 5-foliate, rarely ternate or bipinnate; leaflets papery, triangular-ovate, ovate, or narrowly ovate, 2-5.8×1.5-4.6 cm, at apex acuminate or long acuminate, at base subcordate or rounded, at margin sparsely dentate, 3-lobed or undivided, adaxially appressed-puberulous, abaxially usually densely sericeous-puberulous, basal veins abaxially slightly prominent; petioles 2.2-6.5 cm long, puberulous. Cymes axillary and terminal, usually many-flowered, panicle-like; peduncles 2.8-6.5 cm long, densely puberulous; bracts foliaceous or simple, ovate. Flower 1.1-2 cm in diam.; pedicel 0.6-1.5 cm long, densely puberulous. Sepals 4, white, obovate-oblong, oblong, or narrowly oblong, 6-10×2-4 mm, at apex obtuse or truncate, inside glabrous or sparsely puberulous, outside densely appressed-sericeous-puberulous, on margin velutinous. Stamens 4-7.8 mm long, glabrous; anthers narrowly oblong, 1.2-1.8 mm long, at apex obtuse or minutely apiculate. Ovaries pubescent; styles 4-5 mm long, densely villous. Achenes compressed, elliptic-ovate or broadly ovate, 2-3×1.3-1.8 mm, appressed-puberulous; persistent styles 1.2-2.6 cm long, plumose. Fl. Jul.-Aug.

Afghanistan, Bhutan, China (S Xizang), N India, Kashmir, Nepal, N Pakistan. At forest margins or in bushes on slopes; 200-2400 m.

Additional specimens examined. **Afghanistan.** Kurrum Valley, Aitchison 978 (BM, G, GH, LE). **China. Xizang (西藏):** Gyirong (吉隆), Z. C. Ni et al. 2292 (PE). **India.** Garhwal, Duthie 740 (G), Falconer 3 (K, LE, P, S); Kumaon, Wallich 46686 (K), Strachey & Winterbottom 12 (GH, K, LE, P), Jamson 541 (K); Punjab, Koelz 10245 (GH), Cooper 5680, 5984 (P), Stewart 335 (K), Sheriff 7526 (BM); Simla, Thomson s. n. (BM, G, K, LE, S), Drummond 1010 (GH, S), 10096 (K), Gamble 4799c, 5744A (K), Schlagintweit s. n. (G), Collett 604 (K); Bhim, Dudgeon 472 (MO); Murree, Saunders s. n. (K); Calcutta, Wallich 4668a (K, P); Chamba, Ellis 337 (K). **Kashmir**, Jacquemont 637 (K), 919 (P), Stewart 5989 (K, S), Ludlow & Sheriff 7872 (BM), Tuller 804 (K), Polunin 56-777 (BM), Meebold 3361 (S). **Nepal.** Luma, Polunin et al. 369 (BM, S, US); Marpha, Stainton et al. 1495 (BM, G, P); Kali GAMDaki, Stainton 5580 (BM); Tarakot, Einarsson et al. 2669 (UPS); Dunal, Tabata 3402 (GH); Garsa, Grey-Wilson & Philips 344 (K). **Pakistan.** Chitral, Toppin 639 (K), Stainton 3263 (BM); Chitta Mor, Qureshi 657 (GH); Kalapani, Nasir 6158 (US), Shah 133 (GH); Mardan, Ajab 1180 (GH); Rawalpindi, Aitchison 173, Stewart 7112 (K); Swat, Rodin 5593 (G, K, US), Shah 30, 496 (GH).

This Himalayan species is exceedingly similar to *C. javana*, *C. mollissima*, and *C. multistriata* of southeastern tropical Asia, and to *C. grandidentata*, *C. gratopsis*, *C. chingii*, *C. petterae*, and *C. apifolia* of the Chinese subtropical regions. These species form an important complex within the series *Clematis*, and further study of their relationships is needed.

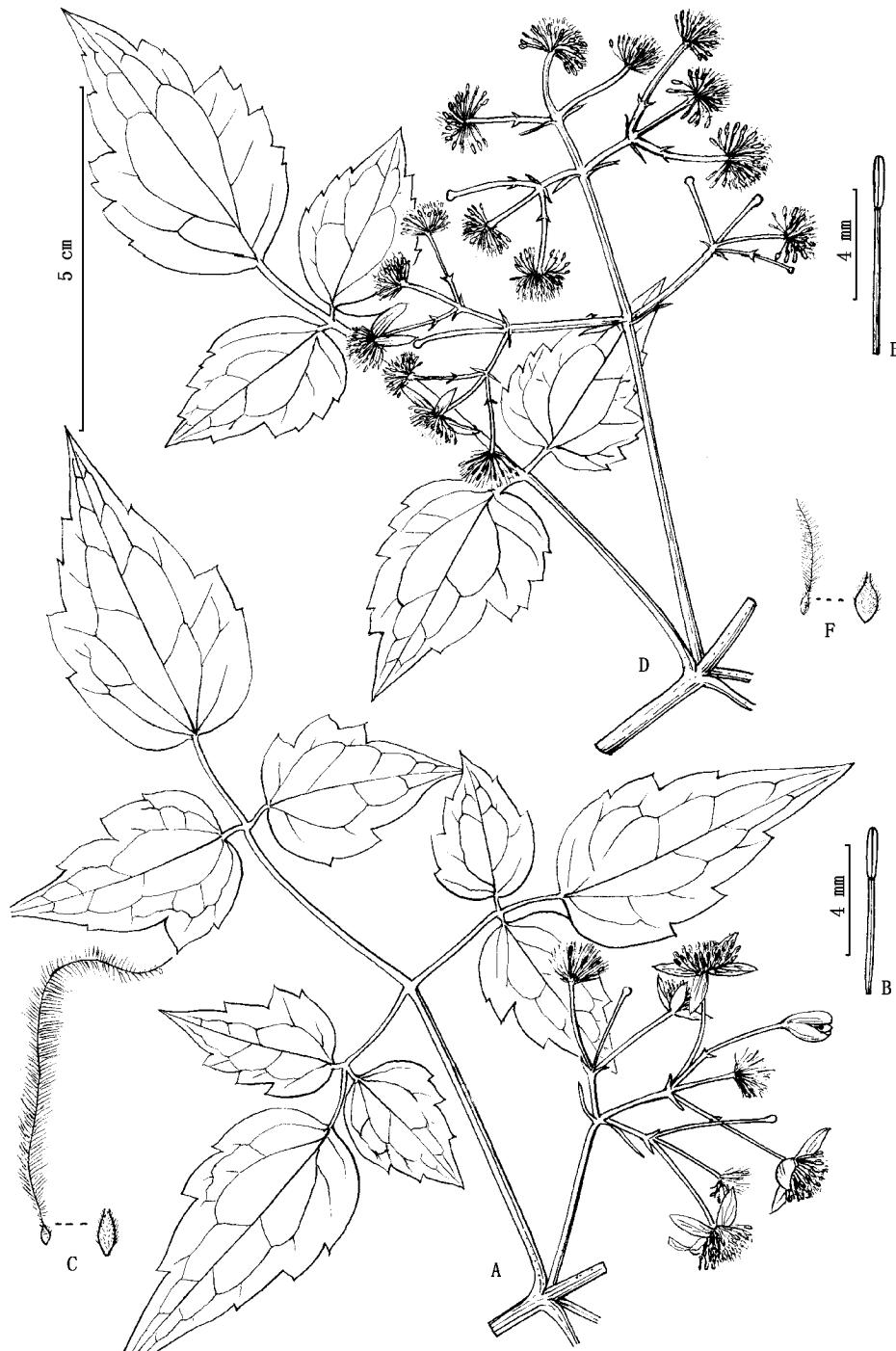


Fig. 9. A - C, *Clematis javana* DC. A, flowering branch; B, stamen (from Newton s. n.); C, achene (from Horsfield 7). D - F, *C. grata* Wall. D, flowering branch; E, stamen; F, achene. (from Thomson s. n.)

**20. *Clematis javana* DC.**, Syst. 1: 152. 1818; et Prodr. 1: 7. 1824; de Vriese in Pl. Jungh. 1: 75. 1851; Turcz. in Bull. Soc. Nat. Mosc. 27: 273. 1855; Miq., Fl. Ind. Bot. 1(2): 4. 1858; Hand.-Mazz. in Acta Hort. Gotob. 13: 217. 1939; H. Eichler in Bibl. Bot. 124: 24. 1958; Backer & Bakhuiz., Fl. Java 1: 145. 1963; M. Johnson, Klematis 433. 1997; Grey-Wils., Clematis 35. 2000; W. T. Wang in Acta Phytotax. Sin. 39(1); 3. 2001; W. T. Wang & Barth. in Fl. China 6: 350. 2001. —— *C. vitalba* L. ssp. *javana* (DC.) Kuntze in Verh. Bot. Ver. Brand. 26: 100. 1885. Type: Java, Lahaie s. n. (holotype, G).

*C. bibernata* DC., Syst. 1: 149. 1818, excl. syn.; et Prodr. 1: 6. 1824; Maxim. in Mél. Biol. 9: 592. 1876; Engler in Bot. Jahrb. 7: 455. 1886. —— *C. vitalba* var. *biternata* (DC.) Boerlage, Cat. Pl. Phan. Hort. Bot. Bog. 1: 1. 1899. Type: Timor, Riedle s. n. (holotype, P).

*C. junghuhniana* de Vriese in Pl. Jungh. 1: 75. 1851. —— *C. vitalba* γ *junguhuhniana* (de Vriese) Hall. in Ann. Jard. Bot. Buitenz. 14: 271. 1897. Type: Java, Junghuhn s. n. (lectotype, L!).

*C. gouriana* Roxb. ex DC. var. *malaica* Miq. in Ann. Mus. Lugd.-Bot. 4: 66. 1868; Merr. & Perry in J. Arn. Arb. 24: 34. 1943 et 29: 154. 1948. Type: Java, Junghuhn s. n. (lectotype, L!).

*C. vitalba* ssp. *cumingii* Kuntze in Verh. Bot. Ver. Brand. 26: 100. 1885. —— *C. vitalba* β *cumingii* Kuntze ex Hall. in Ann. Jard. Bot. Buitenz. 14: 271. 1897. Type: Philippines, Cuming 766 (lectotype, P, not seen; isolectotypes, BM!, K!).

*C. vitalba* ssp. *brevicaudata* (DC.) Kuntze in l. c., p. p. quoad pl. Timor. et Java.

*C. taiwaniana* Hayata in J. Coll. Sci. Univ. Tokyo 30(1): 17. 1911; et Ic. Pl. Formos. 1: 23, pl. 4. 1911; Ting in Fl. Reip. Pop. Sin. 28: 190. 1980; W. T. Wang in Bull. Bot. Res. Harbin 7(2): 101. 1987; et in Acta Phytotax. Sin. 36(2): 156. 1958; Grey-Wils., Clematis 43. 2000. Syntypes: China. Taiwan (台灣), Kawakami & Mori 73, 1229 (TI!).

*C. grata* Wall. var. *lobulata* Rehd. & Wils. in Sarg., Pl. Wils. 1: 337. 1913, p. p. excl. pl. Hubei. et Sichuan. Paratypes: China. Taiwan (台灣), Oldham 2(G!, GH!, K!, P!, S!), Henry 904 (GH!), 904A (GH!, K!).

*C. grata* var. *ryukiuensis* Tamura in Acta Phytotax. Geobot. 15(1): 17. 1953; Walker, Fl. Okinawa & S Ryukyu Isls. 462. 1976; M. Johnson, Klematis 432. 1997. Type: Japan. Ryukyu: Okinawa Island, 1923-08, Koidzumi s. n. (holotype, KYO, not seen).

*C. gouriana* auct. non Roxb. ex DC. : Merr., Enum. Philip. Flow. Pl. 2: 141. 1923; Kaneh. & Hatus. in Bot. Mag. Tokyo 52: 354. 1938; Liu & Hsieh in Fl. Taiwan 2: 484. 1976.

*C. grata* auct. non Wall. : T. Y. Yang & T. C. Huang in J. Taiwan Mus. 44(1): 148, pl. 4. 1991, p. p. quoad pl. Taiwan, tantum; in Taiwania 40(3): 222. 1995; et in Fl. Taiwan, ed. 2, 2: 524, pl. 244. 1996.

### 串鼻龙 Fig. 9: A – C

Woody vine. Branches shallowly 6-sulcate, densely appressed-puberulous, often glabrescent. Leaves twice or once ternate, or pinnate; leaflets papery, ovate, narrowly ovate, or elliptic, 2–8 (–11) × 1.5–5.6 (–10) cm, at apex acuminate or long acuminate, at base rounded, cordate, or subtruncate, at margin sparsely dentate or entire, undivided or 3-lobed, adaxially appressed-puberulous, abaxially densely or sparsely puberulous, rarely subglabrous, basal veins abaxially slightly prominent; petioles 4–11 cm long. Cymes axillary and terminal, 9–many-flowered; peduncles

2.5–9 cm long, with pedicels densely puberulous; bracts petiolate, narrowly ovate, elliptic, or lanceolate, up to 4 cm long, undivided or 3-lobed, or small, subsessile, narrowly lanceolate, ca. 8 mm long. Flower 1.5–2 (–2.5) cm in diam.; pedicel 7–18 mm long. Sepals 4, white, oblong, narrowly oblong, or oblanceolate-oblong, 7–11 (–15) × 2–4.5 (–5) mm, at apex obtuse or acute, inside appressed-puberulous, rarely glabrous, outside densely appressed-puberulous, on margin velutinous. Stamens 4–6 (–8) mm long, glabrous; anthers narrowly oblong or oblong, 1.2–1.5 (–2) mm long, at apex obtuse. Ovaries densely puberulous; styles 4–7 mm long, densely villous. Achenes compressed, lanceolate or fusiform, 2.5–4 × 1.2–1.8 mm, densely puberulous; persistent styles 1.6–3 (–3.5) cm long, plumose. Fl. Feb. – Sept.

China (Taiwan), Indonesia, Japan (Ryukyu Isls.), Papua New Guinea, Philippines, Timor. In open places, at forest margins, by streams; 0–2500 m.

Additional specimens examined. **China. Taiwan (台湾)**: Taibei (台北), E. H. Wilson 10264 (GH), Tanaka & Shimada 11149 (G, K, S, US); Taoyuan (桃园), Tamura & Koyama 23077 (GH, KYO), C. I. Peng 12121 (GH); Yilan (宜兰), Tamura & Koyama 23795 (GH, KYO), Hualian (花莲), C. C. Liao 1532 (GH), Kao 4090 (US); Nantou (南投), Tamura, Shimizu & Kao 21867, 22278 (KYO); Pingdong (屏东), T. C. Huang 15229 (GH); Tammi, Faurie 169 (G). **Indonesia**. Java, Horsfield 7, Hoffmannsegg 149, Backer 8603 (K), Roemer 1638, 1838, Zollinger 2243, 2928 (LE). **Japan**. Ryukyu Isls.: Okinawa Isol., Amano 6049 (GH), Walker et al. 5771 (GH); Ishigaki Isl., Furuse 840, 3485, 3607 (K); Miyako Isl., Furuse 3316 (K). **Papua New Guinea**. Morobe, Fryar 3968, Millar & Dockrill 12067, Royen 18085 (K); Ilakai, Cruttwell 958 (K); Kaiser Wilhelmsland, Weinland 89 (G, LE); Mt. Kouta, Cruttwell 944 (K); Goilala, Hartley 13050 (K). **Philippines**. Mindanao Isl., Elmer 11187, 13342 (K); Luzon Isl., Elmer 5697, 17917, Merrill 4424, 11612, Ramos 76763, Edano 17783 (K), Clemans 17655 (LE); Bohol Isl., Cuming 1856 (K). **Timor**, Teysmann s. n., Newton s. n. (K).

**21. *Clematis mollissima* (Hall.) H. Eichler in Bibl. Bot. 124:23. 1958; M. Johnson, Clematis 435. 1997; Grey-Wils., Clematis 36. 2000. — *C. vitalba* L. var. *mollissima* Hall. in Ann. Jard. Bot. Buitenz. 14:272. 1897; et in Bull. Herb. Boiss., ser. 2, 1:694. 1901. Type: Celebes, Lakka, Bonthain, Teysmann 13960 (lectotype, BO).**

Woody vine. Branches shallowly 6-sulcate, velutinous or densely pubescent. Leaves pinnate, 5-foliolate, or ternate; leaflets thickly papery, narrowly ovate or ovate, 3–7 (–10) × 1.8–4.5 (–8) cm, at apex long acuminate, acuminate, or acute, at base subcordate or rounded, at margin coarsely few-dentate, undivided or 3-lobed, adaxially more or less densely appressed-pubescent, abaxially velutinous or densely pubescent, basal veins abaxially slightly prominent; petioles 3–5 cm long. Cymes axillary and terminal, 10–many-flowered, terminal ones panicle-like; peduncles ca. 2.5 cm long, with pedicels velutinous; bracts narrowly lanceolate, ca. 8 mm long. Flower 1.2–1.6 cm in diam.; pedicel 4–14 mm long. Sepals 4, oblong, 7–13 × 3–5 mm, at apex obtuse, inside sparsely puberulous, outside velutinous. Stamens 4–8 mm long, glabrous; anthers oblong or narrowly oblong, 1–1.5 mm long, at apex obtuse. Ovaries densely pubescent; styles ca. 6 mm long, densely villous. Achenes compressed, ovate or elliptic, 3–4 × 1.6–2 mm, appressed-puberulous; persistent styles ca. 3 cm long, plumose. Fl. Oct.

Indonesia (S Celebes). On slopes; 900–1000 m.

Specimens examined. Celebes, Sarasin 1305 (K), Bünnemeyer 11561, 11726 (K).

**22. *Clematis multistriata*** H. Eichler in Bibl. Bot. 124:28, t. 2. 1958; Baker & Bakhuiz. in Fl. Java 1:145. 1963; M. Johnson, Klematis 436, 1997; Grey-Wils., Clematis 43. 2000. Type: Indonesia. Java: Pasuruan, Mt. Ardjuno, 1935-06, van Steenis 7082 (holotype, GH!; isotype, K!); Mt. Merbabu, Baker 30274 (paratype, K!); Nyadisari, Kooders 37721, 37723 (paratypes, K!); Jang Plateau, van Steenis 10876 (paratype, K!). Lombok: Rindjani-Vulkangebirge, Elbert 1403 (paratype, K!).

*C. vitalba* L. ssp. *javana* (DC.) Kuntze in Verh. Bot. Ver. Brand. 26:100. 1885, p. p.; Hall. in Ann. Jard. Bot. Buitenz. 14:272. 1897, p. p.

Woody vine. Branches shallowly 10-12-sulcate, appressed-puberulous, with 20-24 vascular bundles, in leaf axils often with 2 small ovate leaves ca. 1.6 cm long. Leaves bipinnate, 15-21-foliolate; leaflets thickly papery, oblong-ovate or ovate, 2.2-5.5(-6.5)×1.4-2.8(-3.2) cm, at apex acuminate, at base subcordate or rounded, at margin few-dentate, seldom entire, usually undivided, adaxially sparsely and abaxially slightly densely appressed-puberulous, basal veins abaxially prominent; petioles up to 7 cm long. Cymes axillary and terminal, many-flowered, panicle-like; peduncles 3-5 cm long, with pedicels densely puberulous; bracts short petiolate, leaflet-like, ca. 1.4 cm long. Flower 1.4-2 cm in diam.; pedicel 0.9-1.8 cm long. Sepals 4, oblanceolate-oblong, 7-10×3-5 mm, at apex slightly obtuse, inside sparsely puberulous, outside very densely appressed-puberulous, on margin velutinous. Stamens 6-9 mm long, glabrous; anthers narrowly oblong or oblong, 1.2-1.8 mm long, at apex obtuse. Ovaries densely puberulous; styles ca. 6 mm long, densely villous. Achenes compressed, elliptic, 3.5-4×1.2-2 mm, pubescent; persistent styles 2.7-3.2 cm long, plumose. Fl. May-Jul.

Indonesia (Java, Bali, Lombok). In forests or bushes; 1400-2800 m.

Additional specimen examined. Java: Mt. Merbabu, Backer 30274 (K).

**23. *Clematis brevicaudata*** DC., Syst. 1:138. 1818; et Prodr. 1:3. 1824; Maxim. in Bull. Acad. Sci. St.-Petersb. 22:216. 1877; Franch., Pl. David. 1:14. 1884; Forb. & Hemsl. in J. Linn. Soc. Bot. 23:3. 1886; Diels in Bot. Jahrb. 29:332. 1900; Finet & Gagnep. in Bull. Soc. Bot. France 50:533. 1903; Kom. in Acta Hort. Petrop. 22:280. 1903; Schneid., Ill. Handb. Laubh. 1:291. 1906; Rehd. in J. Arn. Arb. 4:189. 1923; Kung & Wang in Contr. Inst. Bot. Nat. Acad. Peiping 2:292. 1934; Hand.-Mazz. in Acta Hort. Gotob. 13:215. 1939; Rehd., Man. Cult. Tr. & Shr., ed. 2, 218. 1940; Anonymous in Fl. Bejing. 1:304, fig. 250. 1962; Anonymous in Iconogr. Corm. Sin. 1:752, fig. 1504. 1972; Anonymous in Fl. Tsinling. 1(2):299. 1974; S. H. Li & Y. H. Yang in Fl. Pl. Herb. Chin. Bor.-Or. 3:169. 1975; T. B. Lee, Ill. Fl. Korea 346, fig. 1381. 1979; Ting in Fl. Reip. Pop. Sin. 28:188, fig. 26. 1980; Ding et al., Fl. Henan 1:452. 1981; Grubov, Key Vasc. Pl. Mongol. 112. 1982; C. Y. Wu, Ind. Fl. Yunnan. 1:106. 1984; He, Fl. Beijing, rev. ed., 1:251. 1984; M. Y. Fang in Fl. Xizang. 2:90. 1985; J. W. Wang in Fl. Hebei. 1:476. 1986; Y. Z. Zhao in Fl. Intramongol., ed. 2, 2:522. 1990; Y. J. Ling et al. in Fl. Shanxi. 1:647. 1992; L. Q. Li in Vasc. Pl. Hengduan Mount. 1:526. 1993; Y. N. Lee, Fl. Korea 163. 1996; L. H. Zhou in Fl. Qinghai. 1:348. 1997; M. Johnson, Klematis 425. 1997, p. p. excl. syn. *C. apiifolia* DC. var. *biernata* Makino; Grey-Wils., Clematis 36. 2000; W. T. Wang in Fl. Yunnan. 11:223. 2000; W. T. Wang & Barth. in Fl. China 6:350. 2001. — *C. vitalba* L. var. *brevicaudata* (DC.) Kuntze in Verh. Bot. Ver. Brand. 26:100. 1885; Nakai in J. Coll. Sci. Univ. Tokyo 26(1):10. 1909. Type: China. Montane region on the north of Bejing,

Staunton s. n. (holotype, G!; isotype, BM!).

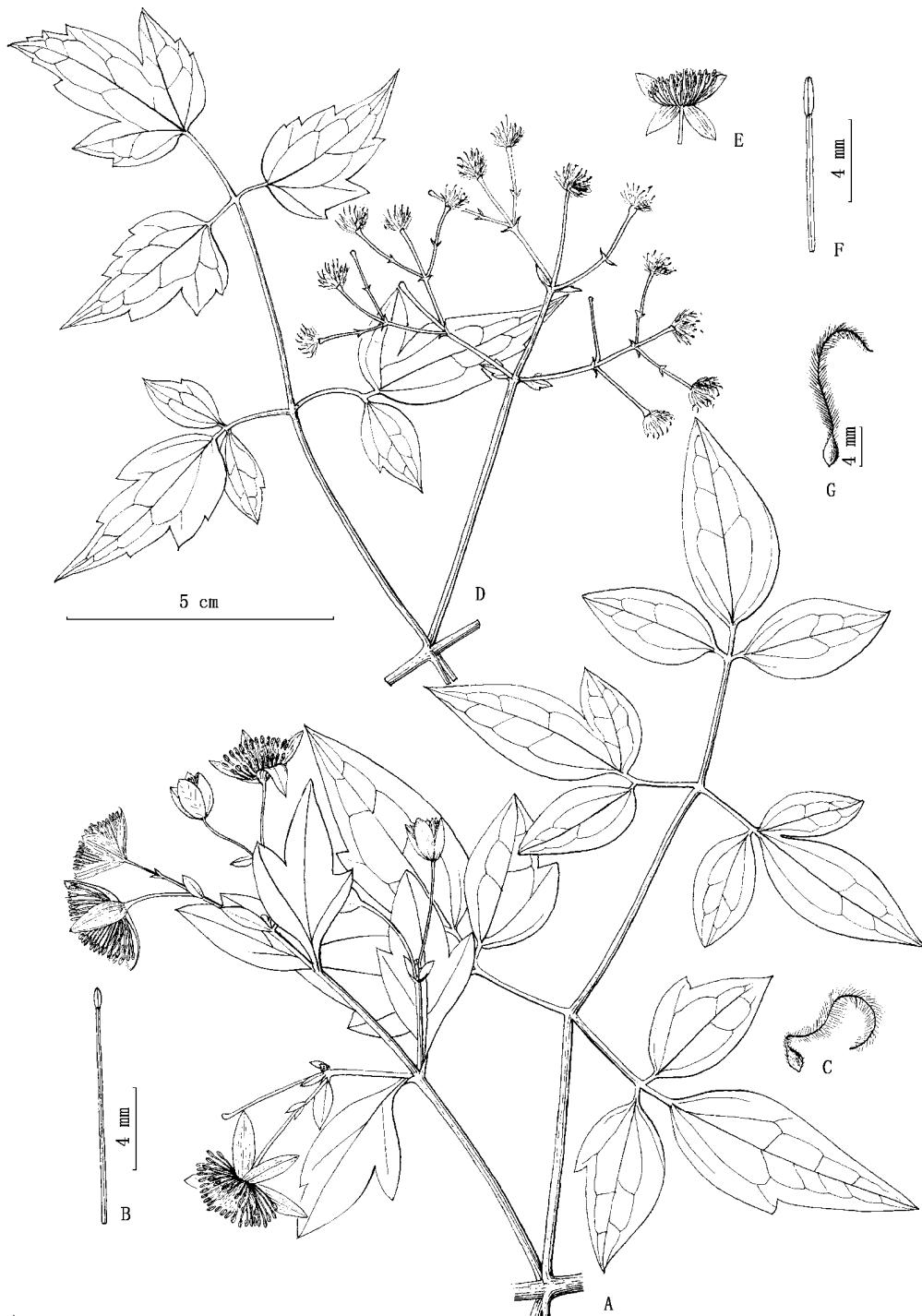
*C. brevicaudata* var. *malacotricha* W. T. Wang in Acta Phytotax. Sin. 39(4):313. 2001; et in Fl. China 6:351. 2001, syn. nov. Type: China. Sichuan (四川): Zoigê (若尔盖), P. K. Hsiao & T. K. Mi 20305 (holotype, PE!).

短尾铁线莲 Fig. 10 : D - G

Woody vine. Branches shallowly 5-sulcate, puberulous or subglabrous. Leaves bi ternate or twice or once pinnate, rarely ternate; leaflets thinly papery, ovate to lanceolate, (1-)1.5-6 × 0.7-3.5 cm, at apex long acuminate or acuminate, rarely acute, at base rounded, broadly cuneate, or subcordate, at margin on each side 1-3(-6)-dentate, undivided or 3-lobed, on both surfaces appressed-puberulous or nearly glabrous, sometimes abaxially slightly densely puberulous, basal veins abaxially slightly prominent; petioles 1.7-8 cm long, puberulous. Cymes axillary and terminal, 4-many-flowered, often panicle-like; peduncles 2-5 cm long; bracts ovate or linear, 0.4-1.2 cm long, undivided or 3-parted. Flower (1-)1.5-2 cm in diam.; pedicel (5-)9-13 mm long, puberulous. Sepals 4, white, obovate-oblong or oblong, (6-)9-11 × (2-)3-4 mm, at apex obtuse, inside sparsely puberulous, outside puberulous, on margin velutinous. Stamens 6-10 mm long, glabrous; anthers narrowly oblong, 1-2 mm long, at apex obtuse. Ovaries puberulous; styles ca. 5 mm long, densely villous. Achenes compressed, elliptic-ovate, ca. 3 × 2 mm, densely appressed-puberulous; persistent styles 1.2-2 cm long, plumose. Fl. Jul. - Sept.

China (C & S Gansu, W & N Hebei, Heilongjiang, W Henan, E Jilin, Liaoning, Nei Mongol, Ningxia, E Qinghai, Shaanxi, Shandong, Shanxi, W Sichuan, E Xizang, NW Yunnan), N Korea, Mongolia, Russia (Far East Region). In bushes or sparse forests; 460-2800 m.

Additional specimens examined. **China. Gansu** (甘肃): Tebbu (迭部), Rock 14569 (GH, LE), 14632 (UPS); Zhoni (卓尼), W. Y. Hsia 8521, T. P. Wang 5228 (PE); Lintan (临潭), T. P. Wang 5221 (PE); Xiahe (夏河), K. T. Fu 1194 (PE); Linxia (临夏), Taohe Exped. 57-3703 (PE); Xinglongshan (兴隆山), Huanghe Exped. 56-5966 (PE); Lanzhou (兰州), Y. Q. He 4960 (PE); Lianhuashan (莲花山), Rock 12750 (GH, K), 13614 (GH, LE); Yongdeng (永登), Loe. -Plat. Exped. 4798 (WUK); Tianshui (天水), Z. W. Zhang 253 (PE); Pingliang (平凉), Huanghe Exped. 56-1877 (PE); Heshui (合水), Huanghe Exped. 54-655 (PE). **Hebei** (河北): Xingtai (邢台), H. F. Chow 43488 (PE); Fupin (阜平), K. M. Liou 3296 (PE); Laiyuan (涞源), Hebei Exped. 59-2977 (PE); Yi Xian (易县), X. L. Huang 3305 (PE); Xiaowutaishan (小五台山), H. Smith 799 (GH, UPS), Meyer 1317, Hers 2173 (GH), H. W. Kung 982, C. W. Wang 61731 (PE); Chengde (承德), W. Wang 3012 (PE); Huailai (怀来), X. L. Huang 2164 (PE); Zhuolu (涿鹿), W. Y. Hsia 2484, C. G. Yang 200 (PE); Longguan (龙关), X. L. Huang 4498 (PE); Zhangjiakou (张家口), X. L. Huang 4843 (PE); Shanhaiguan (山海关), F. T. Wang 450 (PE). **Beijing** (北京): H. F. Chow 42023 (PE); Williams 12703 (GH, K), Bretschneider 1810 (GH, MO), Kirilow s. n. (LE); Baihuashan (百花山), W. Y. Hsia 2265 (PE); Wulingshan (雾灵山), W. T. Wang 2376 (PE). **Heilongjiang** (黑龙江): Maoershan (猫儿山), Q. T. Li et al. 55 (LE, PE); Harbin (哈尔滨), Skvortzev s. n. (GH); Ning'an (宁安), W. T. Wang 98-1 (PE); Yilan (依兰), Y. L. Zhang 1907 (WUK). **Henan** (河南): Mianchi (渑池), Loe.-Plat. Exped. 1415 (WUK); Lin Xian (林县), K. T. Fu 19080 (WUK). **Jilin** (吉林): Jiaohe (蛟河), Y. L. Zhang 1047 (LE, PE); Helong (和龙), Yanbian Exped. 59-721 (PE); Niuguta, Komarov 705 (K). **Liaoning** (辽宁): Shenyang (沈阳), Sato 7587 (PE). **Nei Mongol** (内蒙古): Alashan, Przewalski s. n.



**Fig. 10.** A – C, *Clematis wissmanniana* Hand.-Mazz. A, flowering branch; B, stamen; C, achene (from S. F. Wu 6267). D – G, *C. brevicaudata* DC. D, flowering branch; E, flower; F, stamen; G, achene (from W. Y. Hsia 2484).

(G, K, LE), K. M. Liou 96 (PE); Ordos, 1884-08-22, Potanin s. n. (LE); Wulashan (乌拉山), W. Y. Hsia 3065 (PE); Liangcheng (凉城), Loe.-Plat. Exped. 4160 (WUK); Duolun (多伦), Nei Mongol Exped. 74-68 (HIMC); Daqingshan (大青山), T. P. Wang 2405 (PE); Zhuozi (卓资), Y. C. Ma 265 (HIMC); Wengniuteqi (翁牛特旗), W. S. Yang 991 (HIMC); Keshiketengqi (克什克腾旗), Ximeng Exped. 298 (HIMC). **Ningxia** (宁夏): Guyuan (固原), J. X. Yang 5548 (WUK); Tongxin (同心), Loe.-Plat. Exped. 3998 (WUK); Helanshan (贺兰山), R. C. Ching 1074 (GH), Ningxia Exped. 73-A9 (PE). **Qinghai** (青海): Guide (贵德), Przewalski s. n. (G, LE); Minhe (民和), S. W. Liou 2955 (PE); Datong (大通), K. M. Liou 5955 (PE). **Shaanxi** (陕西): Lintong (临潼), Huanghe Exped. 56-6825 (PE); Xunyi (旬邑), Y. L. Xiao 905 (PE); Tongchuan (铜川), Loe.-Plat. Exped. 532 (WUK); Yan'an (延安), J. X. Yang 4662 (WUK); Yanchuan (延川), K. T. Fu 7793 (PE); Qingjian (清涧), K. T. Fu 7902 (PE); Zhidan (志丹), Shengan Exped. 10822 (PE); Jingbian (靖边), Huanghe Exped. 56-7737 (PE); Hengshan (横山), Huanghe Exped. 56-7570 (PE). **Shandong** (山东): Boshan (博山), C. Y. Chiao 3145 (GH). **Shanxi** (山西): Yuanqu (垣曲), H. Smith 6283 (GH, UPS); Yicheng (翼城), X. Y. Liu 20495 (PE); Huoshan (霍山), Licent 12318 (GH); Xi Xian (隰县), T. P. Wang 3722 (PE); Fenyang (汾阳), T. P. Wang 2782 (K, PE); Wutaishan (五台山), K. C. Kuan & Y. L. Chen 2065 (PE); Wuzhai (五寨), Huanghe Exped. 55-2757 (WUK); Fanshi (繁峙), Loe.-Plat. Exped. 3593 (WUK); Hunyuan (浑源), Loe.-Plat. Exped. 1883 (WUK). **Sichuan** (四川): Xiangcheng (乡城), T. T. Yü 13317 (PE); Batang (巴塘), Sichuan Exped. 4340 (PE); Daocheng (稻城), Sichuan Exped. 2520 (PE); Kangding (康定), Soulie 479 (G, K), W. K. Hu 11271 (PE); Jinchuan (金川), X. Li 78267 (PE); Xiaojin (小金), X. S. Zhang 6997 (PE); Heishui (黑水), X. Li 73852 (PE); Mao Xian (茂县), F. T. Wang 1509 (PE); Barkam (马尔康), X. Li 71883, 72514 (PE); Songpan (松潘), H. Smith 4577 (GH, UPS); Nanping (南坪), W. L. Chen et al. 8565 (PE). **Xizang** (西藏): Zayü (察隅), Qingzang Exped. 10952 (PE); Markam (芒康), Xizang Exped. 76-532 (PE); Dryang, Ludlow, Sherriff & Elliot 14338 (UPS). **Yunnan** (云南): Dêqên (德钦), T. T. Yü 10175, 10703 (PE). **Korea**. Rankyo, Mozan, E. H. Wilson 8922 (GH); Ping Yang, J. G. Jack s. n. (GH). **Russia**. Far East Region: Vladivostok, Ulanova 5828 (G, GH, MO); Primorski, Makarov s. n. (GH).

**24. *Clematis wissmanniana*** Hand.-Mazz. in Acta Hort. Gotob. 13: 212. 1939; Ting in Fl. Reip. Pop. Sin. 28: 182. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1: 114. 1984; M. Johnson, Klematis 450. 1997; Grey-Wils., Clematis 44. 2000; W. T. Wang in Fl. Yunnan. 11: 222. 2000; W. T. Wang & Barth. in Fl. China 6: 351. 2001. Type: China. Yunnan (云南): Yuanjiang (元江), 1220 m, Henry 13219 (holotype, K!; isotypes, K!, MO!); Simao (思茅), Henry 13346 (paratypes, K!, MO!).

*C. gratopsis* W. T. Wang var. *integerriloba* W. T. Wang in Acta Phytotax. Sin. 6(4): 385. 1957. Type: China. Yunnan (云南): Mengzi (蒙自), 1939-10-02, C. W. Wang 83299 (holotype, PE!).

### 厚萼铁线莲 Fig. 10: A - C

Woody vine. Branches shallowly 6-sulcate, densely puberulous. Leaves bipinnate or pinnate; leaflets papery, ovate or long ovate, 2-8×1-3 cm, at apex acute or acuminate, at base rounded, at margin usually entire, sometimes 1-2-dentate, undivided or unequally 2-3-lobed, on both surfaces densely appressed-puberulous, basal veins abaxially nearly flat; petioles 4-8 cm long,

densely puberulous. Cymes axillary and terminal, 3–20-flowered; peduncles 5–10 cm long, densely appressed-puberulous or velutinous; bracts narrowly ovate, ovate, or long elliptic, undivided or 3-lobed. Flower 2–3.2 cm in diam.; pedicel 1.2–6 cm long, densely appressed-puberulous or velutinous. Sepals 4, white, oblong or elliptic-oblong, 10–20 × 4–10 mm, at apex slightly obtuse, inside glabrous, outside densely puberulous, on margin velutinous. Stamens 7–14 mm long, glabrous; anthers oblong, 1.5–2 mm long, at apex obtuse. Ovaries puberulous; styles ca. 5 mm long, densely villous. Achenes compressed, rhombic-ovate, ca. 4 × 2.8 mm, pubescent; persistent styles ca. 3.5 cm long, plumose. Fl. Sept.–Oct.

China (S Yunnan). In bushes of sparse woods; 1200–1800 m.

Additional specimens examined. **China. Yunnan** (云南): Mengzi (蒙自), Henry 9346A (K, LE), 9346B (LE), 13346 (K); Yuanjiang (元江), Y. H. Li 5640 (KUN), W. Q. Yin 1979 (KUN), S. F. Wu 6267 (PE, SHTU).

Unclear species: *Clematis thaimontana* Tamura in Thai For. Bull. Bot. 28:17. 2000. Type: Thailand, Maxwell 95-1081 (holotype, CHIAN). According to Tamura, this species is related to *C. wissmanniana* Hand.-Mazz., differing in the sepals being thinner, flat, tomentellose outside and not tricostate.

**25. *Clematis subumbellata* Kurz** in J. As. Bot. Bengal 39(2):9. 1870; et For. Fl. Burma 1:16. 1877; Tamura in J. Phytogeogr. Taxon. 28:14. 1980; et in Thai For. Bull. Bot. 25:67. 1997; W. T. Wang in Acta Phytotax. Sin. 36(2):157. 1998 et 38(4):310. 2000; et in Fl. Yunnan. 11:224. 2000; Grey-Wils., Clematis 39. 2000; W. T. Wang & Barth. in Fl. China 6:350. 2001. — *C. floribunda* Kurz in J. Bot. 5:240. 1867, non Planch. & Triana, 1862. — *C. vitalba* L. ssp. *subumbellata* (Kurz) Kuntze in Verh. Bot. Ver. Brand. 26:100. 1885. Type: described from Pegu, Myanmar, type specimen not found.

*C. kerriana* Drumm. & Craib in Kew Bull. 1914:122. 1914; Hand.-Mazz. in Acta Hort. Gotob. 13:213. 1939; C. E. C. Fisch. in Kew Bull. 1938:294. 1938; Gupta in Bull. Nat. Bot. Gard. Lucknow 80:pl. 32. 1963; Ting in Fl. Reip. Pop. Sin. 28:191, fig. 27. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1:110. 1984; M. Johnson, Klematis 435. 1997. Type: Thailand. Me Ke Mi, 1912-02-14, Kerr 2374 (holotype, K!; isotypes, BM!, P!).

*C. laxipaniculata* Pei in Sinensis 7:473, fig. 1. 1936. Type: China. Yunnan (云南): Puer (普洱), 1933-12-10, Y. Tsiang 12840 (isosynonym, PE!).

*C. umbellifera* Gagnep. in Bull. Soc. Bot. France 82:477. 1936; et in Fl. Gén. Indo-Chin. Suppl. 1:4, fig. 1:1–4. 1938; Ho, Ill. Fl. Vietnam 1:319, fig. 1282. 1999. Syn-types: Vietnam. Annam: Cur-ao, 1932-01-29, Poilane 19976 (P!). Laos. Muong Soui, 1932-02, Poilane 20020 (P!, GH!, K!).

*C. gouriana* auct. non Roxb. ex DC. : M. Johnson, Klematis 428. 1997, p. p. quoad syn. *C. floribunda* Kurz, *C. subumbellata* Kurz et *C. vitalba* ssp. *subumbellata* (Kurz) Kuntze.

### 细木通

Woody vine. Branches 5–6-sulcate, densely puberulous. Leaves twice or once pinnate; leaflets papery or subcoriaceous, narrowly ovate, elliptic, ovate, or oblong, 1.8–8.5 × 1–4.2 cm, at apex acuminate, at base rounded or obtuse, at margin entire, undivided, rarely 1-dentate or unequally 2-lobed, adaxially sparsely puberulous, abaxially densely appressed-puberulous, basal veins abaxially slightly prominent; petioles 2–6.5 cm long, densely puberulous. Cymes axillary and terminal, 8–many-flowered, often panicle-like; peduncles 2.5–6.5 cm long, with pedicels

densely puberulous; bracts short petiolate or sessile, ovate or linear, 0.3–1.4 cm long. Flower 1–1.2 cm in diam.; pedicel 0.8–1.8 cm long. Sepals 4, white, oblong or obovate-oblong, 5–8 × 1.8–3 mm, at apex obtuse, inside densely appressed-puberulous, outside velutinous. Stamens 3.8–6 mm long, glabrous; anthers narrowly oblong or oblong, 1.5–2.2 mm long, at apex obtuse. Ovaries puberulous; styles ca. 5 mm long, densely villous. Achenes compressed, lanceolate or fusiform, 4–4.5 × 1–1.2 mm, puberulous; persistent styles 2.5–4 cm long, plumose. Fl. Dec. – Jan of the next year.

China (S Yunnan), Laos, N Myanmar, N Thailand, Vietnam. On slopes, in bushes or at forest margins; 200–1900 m.

Additional specimens examined. **China.** Yunnan (云南): Fengqing (凤庆), T. T. Yü 18254 (PE); Luxi (潞西), H. T. Tsai 56997 (PE); Jinghong (景洪), Rock 2512 (US); Simao (思茅), Henry 10919 (LE), 10919B (GH); Yiwu (易武), C. W. Wang 80360 (PE); Xiaomengyang (小勐养), C. W. Wang 80924 (PE); Yuanjiang (元江), Henry 10919A (GH, MO). **Laos.** Attopeu, Harmand 1194 (K, P); Khua, Spire 57 (P); Luang, Prabang, Spire 870 (G, P); Rhua Suk Sak, Poilane 2239 (P). **Myanmar.** Shan State: Lashio, Mikee 5987 (P), F. Kingdon Ward 20312 (UPS); Rangoor, Dickason 6035 (GH); Ta Unggyi, Gale 2-14682 (GH). **Thailand.** Chiang Mai, Rock 1699 (GH, K, US), Maxwell 90-271 (GH), Nootboom 872 (K), Smitinand 8793, 10173 (K); Lampang, Maxwell 91-131 (GH); Ta Kanun, Kerr 10265 (K); Hyey Na, Hasen et al. 10952 (K). **Vietnam.** Tokin: Suhut, Poilane 27195 (K, P); Sou La, Ross.-Viet. Exped. 61-1634 (LE).

**26. *Clematis parviloba* Gardn. & Champ. in J. Bot. Kew Gard. Misc. 1: 241. 1849; Benth., Fl. Hongk. 6. 1861; Maxim. in Bull. Acad. Sci. St. Petersb. 22: 220. 1876; Kuntze in Verh. Bot. Ver. Brand. 26: 102. 1885; Forb. & Hemsl. in J. Linn. Soc. Bot. 23: 6. 1886; Finet & Gagnep. in Bull. Soc. Bot. France 50: 534. 1903; Pei in Contr. Biol. Lab. Sci. Soc. China 10: 108. 1936; et in Sinensis 7: 476. 1936, p. p.; et in Sunyatsenia 4: 164. 1940; Hand.-Mazz. in Acta Hort. Gotob. 13: 213. 1939; Ting in Fl. Reip. Pop. Sin. 28: 180. 1980, p. p.; C. Y. Wu, Ind. Fl. Yunnan. 1: 112. 1984; Lin & Zhao in Fl. Fujian. 2: 28, fig. 22. 1985; Y. K. Li in Fl. Guizhou. 3: 59. pl. 25, fig. 1–5. 1986; W. T. Wang in Fl. Guangxi 1: 288. 1991; Z. H. Lin in Fl. Zhejiang 2: 288, fig. 2-382. 1992; M. Johnson, Klematis 446. 1997; K. M. Liu in Fl. Hunan 2: 690. 2000; Grey-Wils., Clematis 44. 2000; W. T. Wang in Fl. Yunnan. 11: 220. 2000, p. p.; et in Acta Phytotax. Sin. 38(5): 403. 2000; W. T. Wang & Barth. in Fl. China 6: 351. 2001. Type: China. Hongkong (香港): towards West-Point, Champion s. n. (holotype, K!).**

### 裂叶铁线莲

This species consists of five varieties, wide-spread in subtropical regions of China.

**26a. var. *parviloba*** Fig. 11: A–C

Woody vine, more or less turning black when drying. Branches shallowly 6-sulcate, densely to sparsely appressed-puberulous. Leaves biinate or pinnate; leaflets papery, narrowly ovate, ovate, or lanceolate, 2.2–7 × 1–3.4 cm, at apex attenuate, acuminate, or acute, at base broadly cuneate or rounded, at margin usually entire, undivided, sometimes 2–3-lobed, adaxially appressed-puberulous, abaxially usually densely, rarely sparsely appressed-sericeous, basal veins abaxially nearly flat; petioles 2.5–8 cm long. Cymes axillary and terminal, (1–)3–5(–9)-flowered; peduncles 3–8 cm long, puberulous; bracts lanceolate or elliptic, 1–3 cm long,

sometimes ternate. Flower 3–4 cm in diam.; pedicel 1.5–4.5 cm long, densely puberulous. Sepals 4, white, lanceolate or oblong-lanceolate, 16–20 × 3.5–8 mm, at apex acute or attenuate, inside glabrous, outside densely puberulous, on margin velutinous. Stamens 7–10 mm long, glabrous; anthers oblong or narrowly oblong, 1.2–1.8 mm long, at apex obtuse. Ovaries densely pubescent; styles 8–10 mm long, densely villous. Achenes compressed, narrowly ovate or rhombic, ca. 5 × 2.2–2.8 mm, pubescent; persistent styles ca. 3 cm long, brownish-plumose. Fl. Jun. – Sept.

China ( Fujian, Guangdong, Guangxi, Guizhou, Hongkong, W Hunan, S Jiangxi, S Yunnan, S Zhejiang). In bushes or in forests, often by streams; 800–1500 m.

Additional specimens examined. **China. Guangdong** (广东): Huaiji (怀集), R. J. Wang 1355 (PE). **Guangxi** (广西): Longan (隆安), R. H. Luo 11947 (PE); Jingxi (靖西), C. C. Chang 14585 (PE); Lingyun (凌云), Steward & Cheo 499 (LE), Z. T. Li 603546 (PE); Quanzhou (全州), J. X. Zhong 83368 (PE). **Guizhou** (贵州): Xingren (兴仁), C. Z. Dang 164 (PE); Anlong (安龙), Guizhou Exped. 59-5465 (PE). **Hongkong** (香港), Wilford 376, C. Wright s. n. (K), Faber s. n. (LE). **Jiangxi** (江西): Xunwu (寻乌), Z. B. Yang & G. Yao 2469 (PE); Longnan (龙南), Jiangxi Exped. 70-1283 (PE); Dayu (大余), J. S. Yuo 1347 (PE). **Yunnan** (云南): Shuangjiang (双江), J. S. Xin 1203 (PE). **Zhejiang** (浙江): Taishun (泰顺), R. C. Ching 2110 (US), S. Chen 3477 (PE); Pingyang (平阳), S. Y. Zhang 5954 (PE).

**26b.** var. **rhombico-elliptica** W. T. Wang in *Acta Phytotax. Sin.* 38(5): 405. 2000; W. T. Wang & Barth. in *Fl. China* 6: 352. 2001. Type: China. Yunnan (云南): Mengzi (蒙自), 1800 m, at forest margin, 1932-12-08, H. T. Tsai 52390 (holotype, PE!); same locality, C. W. Wang 83349 (paratype, PE!); Wenshan (文山), H. T. Tsai 51598 (paratype, PE!); Yan-shan (砚山), C. W. Wang 83717, 84207 (paratypes, PE!); Xichou (西畴), K. M. Feng 11704, 12512 (paratypes, PE!); Funing (富宁), Wenshan Exped. 65-76 (paratype, PE!); Malipo (麻栗坡), K. M. Feng 13184, 13421 (paratypes, PE!).

*C. parviloba* auct. non Gardn. & Champ. : W. T. Wang in *Fl. Yunan.* 11: 220. 2000, p. p.

#### 菱果裂叶钱线莲 Fig. 11:D–F

This variety differs from var. *parviloba* in its smaller flowers, obtuse sepals, and rhombic-elliptic achenes. Leaves bipinnate; leaflets at margin entire. Axillary cymes 5–9-flowered. Sepals obovate-oblong, 10–11 × 4–5 mm, at apex obtuse. Anthers narrowly oblong, 1–1.2 mm long, at apex obtuse. Fl. Oct.

China (SE Yunnan). In forests or bushes, on slopes, or at forest margins; 1100–1800 m.

**26c.** var. **bartlettii** (Yamam.) W. T. Wang in *Acta Phytotax. Sin.* 38(5): 405. 2000; W. T. Wang & Barth. in *Fl. China* 6: 352. 2001. — *C. bartlettii* Yamam. in *Trans. Nat. Hist. Soc. Formos.* 20: 101. 1930; Liu & Hsieh in *Fl. Taiwan* 2: 482. 1976. — *C. parviloba* ssp. *bartlettii* (Yamam.) T. Y. Yang & T. C. Huang in *Taiwania* 40(3): 235, fig. 14. 1995; et in *Fl. Taiwan*, ed. 2., 2: 532, pl. 251. 1996; Grey-Wils., *Clematis* 44. 2000. Type: China. Taiwan (台湾): Taihoku, between Doba and Taiheisan, Bartlett 6011 (holotype, TAI; isotype, US!).

#### 巴氏铁线莲

This variety differs from var. *parviloba* in its usually dentate leaflets and its many-flowered

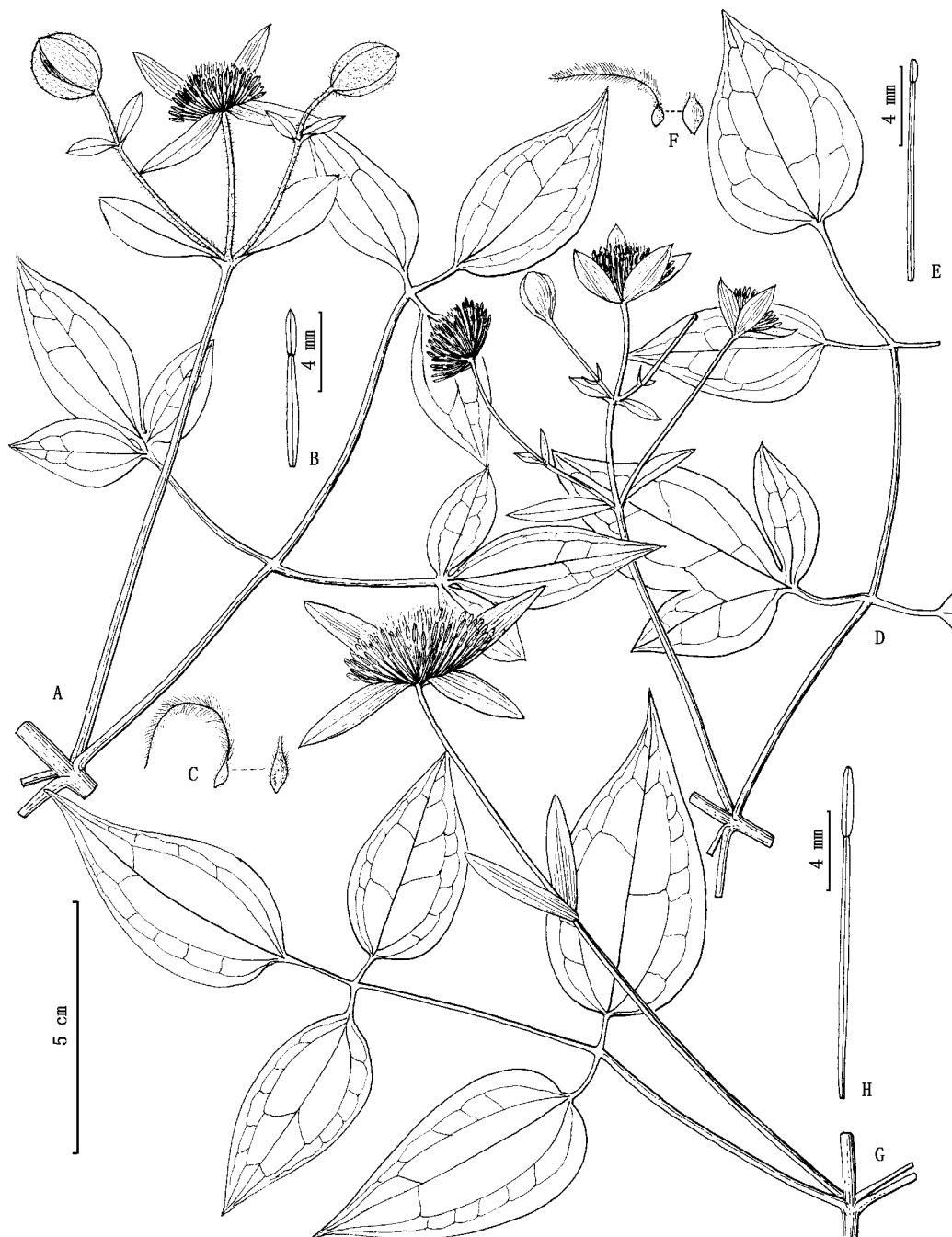


Fig. 11. *Clematis parviloba* Gardn. & Champ. A – C, var. *parviloba*. A, flowering branch; B, stamen; C, achene (from S. Y. Zhang 5954). D – F, var. *rhombico-elliptica* W. T. Wang. D, flowering branch; E, stamen; F, achene (from H. T. Tsai 52390). G, H, var. *longianthera* W. T. Wang. G, flowering branch; H, stamen (from T. T. Yü 547).

axillary cymes. Leaves biternate or bipinnate; leaflets at margin dentate, rarely entire. Sepals elliptic-oblong or narrowly oblong,  $13 - 16 \times 5 - 6.5$  mm, at apex acute. Anthers oblong or narrowly oblong, 1.3–1.6 mm long, at apex obtuse or minutely apiculate. Fl. Aug. – Oct.

China ( Taiwan ). On slopes or at forest margins; 1100–2500 m.

Additional specimens examined. **China. Taiwan** ( 台湾 ): Hualian ( 花莲 ), C. F. Hsieh 330 ( PE ); Nantou ( 南投 ), T. Y. Yang & K. H. Wang 3717, H. M. Song 4216 ( PE ), C. C. Chuang 4043 ( US ); Taizhong ( 台中 ), T. Y. Yang & N. T. Wu 2599 ( PE ), W. P. Leu 355 ( GH ); Yilan ( 宜兰 ), Tamura & Koyama 23793 ( KYO ), T. Y. Yang & S. O. Ou 2454 ( PE ). **26d.** var. *suboblonga* W. T. Wang in *Acta Phytotax. Sin.* 38 ( 5 ): 405. 2000; W. T. Wang & Barth. in *Fl. China* 6 : 352. 2001. Type : China. Sichuan ( 四川 ): Nanchuan ( 南川 ), Xiaohe ( 小河 ), 960 m, 1957-04-24, J. H. Xiong & Z. L. Zhou 90444 ( holotype, PE ! ).

*C. parviloba* var. *tenuipes* ( W. T. Wang ) Ting in *Fl. Reip. Pop. Sin.* 28 : 182. 1980, p. p. quoad pl. Sichuan.

### 长圆裂叶铁线莲

This variety differs from var. *parviloba* in its obtuse sepals and longer anthers. Leaves biternate; leaflets at margin entire. Axillary cymes 3-flowered. Sepals ovate-oblong, ca.  $18 \times 7$  mm, at apex obtuse. Anthers narrowly oblong, 2.2–2.5 mm long, at apex obtuse.

China ( SE Sichuan ). In forests; 960 m.

**26e.** var. *longianthera* W. T. Wang in *Acta Phytotax. Sin.* 36 ( 2 ): 156. 1998 et 38 ( 5 ): 405. 2000; Grey-Wils., *Clematis* 44. 2000; W. T. Wang & Barth. in *Fl. China* 6 : 352. 2001. Type : China. Sichuan ( 四川 ): Emeishan ( 峨眉山 ), 800 m, 1932-04-25, T. T. Yü 547 ( holotype, PE ! ).

### 长药裂叶铁线莲 Fig. 11 : G, H

This variety differs from var. *parviloba* in its once pinnate leaves, obtuse sepals, and longer linear anthers. Leaves pinnate, 5-foliolate; leaflets at margin entire. Axillary cymes 1-flowered. Sepals narrowly lanceolate-oblong,  $20 - 24 \times 5 - 7$  mm, at apex obtuse. Anthers linear, 2.8–3 mm long, at apex obtuse or minutely apiculate. Fl. Apr.

China ( Sichuan : Emeishan ). Scrambling upon woods; 800 m.

**27.** ***Clematis tamurae*** T. Y. Yang & T. C. Huang in *Taiwania* 40 ( 3 ): 239, fig. 16. 1995; et in *Fl. Taiwan*, ed. 2, 2 : 536, pl. 253. 1996; Grey-Wils., *Clematis* 38. 2000; W. T. Wang & Barth. in *Fl. China* 6 : 352. 2001. Type : China. Taiwan ( 台湾 ): Pingdong ( 屏东 ), Manchou, Mt. Nanjenchan, 200 m, 1992-07-07, T. Y. Yang & K. H. Wang 6119 ( holotype, TAI; isotype, PE ! ).

*C. austrotaiwanensis* Tamura ex T. Y. Yang & T. C. Huang in *Taiwania* 40 ( 3 ): 239. 1995, pro syn.

### 田村铁线莲

Perennial herbaceous vine, turning black when drying. Branches shallowly sulcate, appressed-puberulous. Leaves bipinnate, 15-foliolate; leaflets papery, lanceolate or narrowly ovate, ( 3.7 – ) 4.6–5.9 ( –6.2 )  $\times$  ( 0.8 – ) 1.2–1.8 cm, at apex attenuate or acuminate, at base broadly cuneate or cuneate, at margin entire, undivided, rarely 2–3-lobed, on both surfaces sparsely appressed-puberulous, or sometimes adaxially nearly glabrous, basal veins abaxially slightly prominent; petioles 4.4–5.8 cm long. Cymes axillary and terminal, 3–9-flowered; peduncles 2.5–5 cm long; bracts ternate or simple, narrowly ovate, 3-parted. Flower 1.3–2.5 cm in diam.;

pedicel 0.7–1.3 cm long, puberulous. Sepals 4, white, oblong, 10–15×4–6 mm, at apex acute or obtuse, inside puberulous, outside densely appressed-puberulous, on margin velutinous. Stamens 4–8 mm long, glabrous; anthers oblong, ca. 2.4 mm long, at apex obtuse. Ovaries pubescent; styles ca. 7 mm long, densely villous. Achenes compressed, elliptic or ovate, 2.8–4.2×ca. 2 mm, pubescent; persistent styles 2.5–4 cm long, brown- or fulvous-plumose. Fl. Aug. – Oct.

China (Taiwan). In open places or at forest margins; 10–1500 m.

**28. *Clematis taeguensis*** Y. Lee in Kor. J. Bot. 25(4):175, pl. 1. 1982; et Fl. Korea 168, fig. 496. 1996; Grey-Wils., Clematis 98. 2000. Type: Korea. Taegu City: Bommuldong, 1982-09-17, Y. Lee s. n. (holotype).

Woody vine. Stem 1.5 m long, 3 mm in diam., glabrescent. Leaves bipinnate; leaflets lanceolate or narrowly ovate, up to 5×1.4 cm, at apex attenuate or acuminate, at base rounded, at margin entire, adaxially on veins puberulous, abaxially glabrescent, basal veins 3 abaxially prominent; petioles 2–3 cm long. Inflorescences paniculate. Sepals 4, whitish, oblong, ca. 16×4.5 mm, at apex obtuse. Stamens 8 mm long, glabrous; anthers narrowly oblong, ca. 2 mm long, at apex obtuse. Achenes compressed, ovate, ca. 5×3.2 mm; persistent styles ca. 3 cm long, fulvous-plumose. Fl. Sept.

Korea (Taegu City). On rock side by streams.

I have not seen any specimen of this species. Upon the original Latin description and accompanying plate the above description is based.

**29. *Clematis pierotii*** Miq. in Ann. Mus. Bot. Lugd.-Bat. 3:1. 1867; Maxim. in Bull. Acad. Sci. St. Petersb. 22:211. 1876; Makino in Bot. Mag. Tokyo 8:331. 1897; Finet & Gagnep. in Bull. Soc. Bot. France 50:543. 1903. p. p.; Matsum., Ind. Pl. Jap. 2:112. 1912; Makino, Ill. Fl. Jap., rev. ed., 551, fig. 1652. 1953; Tamura in Acta Phytotax. Geobot. 16(3):81. 1956; Ohwi, Fl. Jap. 442. 1965; Walker, Fl. Okinawa & S Ryukyu Isls. 461. 1976; Kitamura & Murata, Colour. Ill. Herb. Pl. Jap., rev. ed., 2:227, fig. 102:3, pl. 52:443. 1980; Tamura in Satake et al., Wild Flow. Jap. 2:73, pl. 72:3. 1982; M. Johnson, Klematis 447. 1997; Grey-Wils., Clematis 44. 2000. — *C. parviloba* Gardn. & Champ. ssp. *pierotii* (Miq.) Kuntze in Verh. Bot. Ver. Brand. 26:148. 1885. — *C. parviloba* var. *pierotii* (Miq.) Huth in Bull. Herb. Boiss. 5:1061. 1897. Syntypes: Japan. Kyushu, Pierot s. n.; Jedo, Siebold s. n.

Fig. 6:C–E (see p. 21)

Woody vine. Branches slender, shallowly 4–6-sulcate, usually sparsely puberulous. Leaves biternate or bipinnate, upper ones sometimes pinnate; leaflets papery, ovate, narrowly ovate, or lanceolate, 1.5–5.5×0.7–3.5 cm, at apex long acuminate, attenuate, or acuminate, at base cuneate, broadly cuneate, subtruncate, or subcordate, at margin 1-dentate on each side or entire, 2–3-lobed to 2–3-parted or undivided, on both surfaces sparsely appressed-puberulous, basal veins abaxially slightly prominent; petioles 3.5–8.4 cm long. Cymes axillary, 1–5-flowered; peduncles 3.5–7.8 cm long; bracts ternate or simple, leaflet-like. Flower 2.3–3 cm in diam.; pedicel 2–4 cm long, puberulous. Sepals 4, white, narrowly lanceolate or oblong, 11–15×3–4.5 mm, at apex acuminate or apiculate, inside glabrous, outside appressed-puberulous, on margin velutinous. Stamens 7–9 mm long, glabrous; anthers narrowly oblong or oblong, 1–1.5 mm long, at apex obtuse or minutely apiculate. Ovaries densely puberulous; styles 6–7 mm long, densely

brownish-villous. Achenes compressed, narrowly ovate or lanceolate, ca.  $5 \times 2$  mm, densely puberulous; persistent styles 1.8–2.5 cm long, brownish-plumose. Fl. Sept.

Japan ( Kyushu, Shikoku, Ryukyu Isls. ).

Specimens examined. **Japan.** Nagasaki, Maximowicz s. n. ( G, K, LE, MO, S ), Oldham 5 ( G, GH, LE ), Wawra 1361 ( LE ), Ichikawa 160 ( GH ); Ambo, Togasi 1465 ( G, K, LE, UPS, US ); Kagoshima, Furuse 11814, 11817 ( K ); Ohsumi, Furuse 11950 ( K ). Yokohama, 1862, Maximowicz s. n. ( GH, LE, K, US ). Ryukyu Isls., Yokohama Nurs. Co. s. n. ( GH ).

Ser. 2. **Puberulae** W. T. Wang, ser. nov. Type: *C. puberula* Hook. f. & Thoms.

Achenia valde bilateraliter compressa complanata, late ovata vel suborbicularia, late marginata. Plantae siccitate plus minusve nigrescentes. Folia bipinnata vel bibernata.

Achenes strongly compressed, flattened, broadly ovate or suborbicular, broadly marginate. Plants more or less turning black when drying. Leaves bipinnate or bibernate.

One species with four varieties wide-spread in China, N Myanmar, Bhutan, N India, and Nepal.

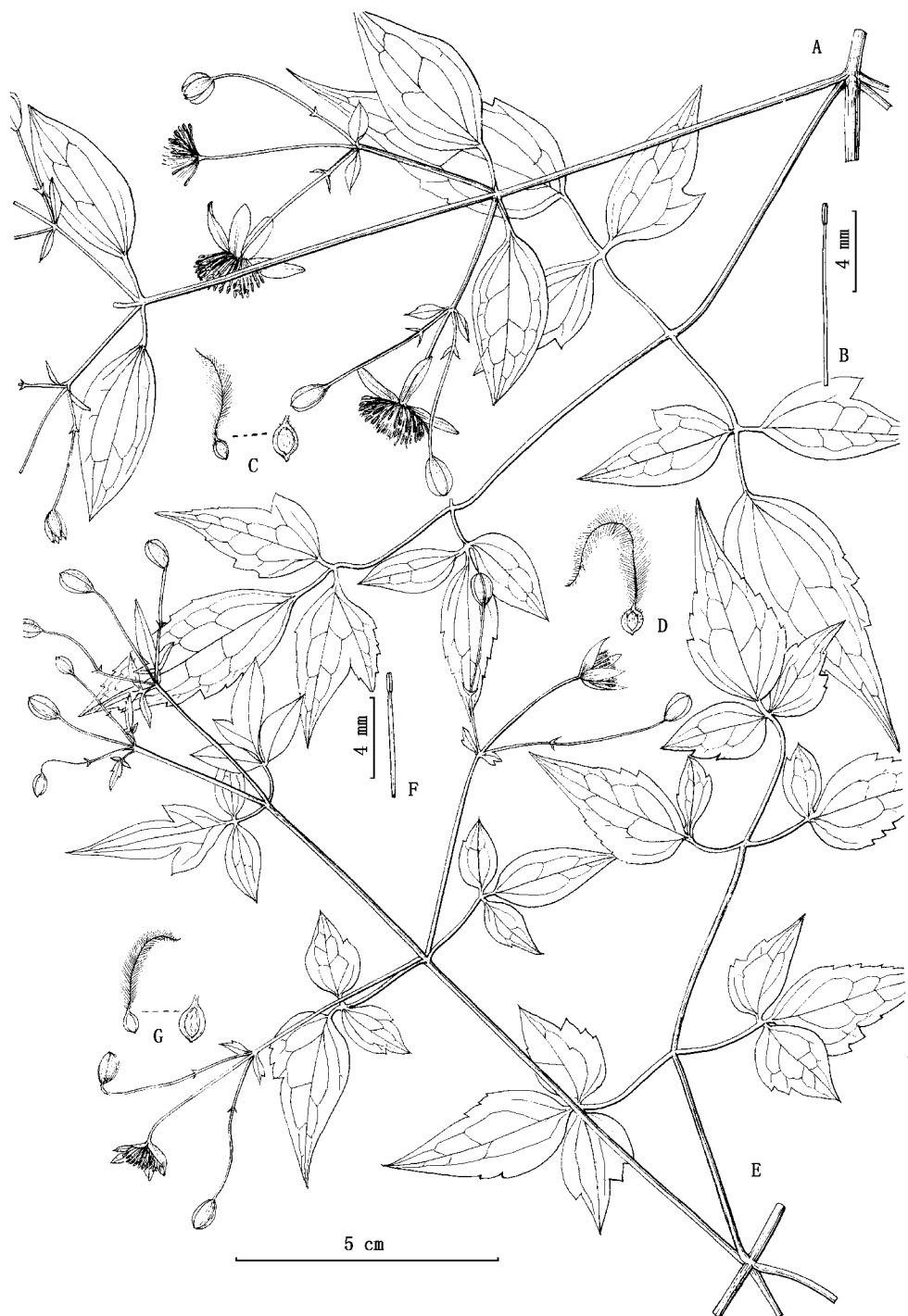
**30. *Clematis puberula* Hook. f. & Thoms.** in Hook. f., Fl. Brit. Ind. 1:4. 1872; Mukerjee in Bull. Bot. Surv. Ind. 1(1):140. 1959; Gupta in Bull. Nat. Bot. Gard. Lucknow 54: pl. 15. 1961; Kapoor in l. c. 78:42. 1962; Hara in Hara & Williams, Enum. Flow. Pl. Nepal 2: 15. 1979; Grierson & Long, Fl. Bhutan 1(2):290. 1984; Rau in Sharma et al., Fl. Ind. 1: 74. 1993; M. Johnson, Klematis 448. 1997; Grey-Wils., Clematis 45. 2000; W. T. Wang in Acta Phytotax. Sin. 38(5):406. 2000; W. T. Wang & Barth. in Fl. China 6: 352. 2001. — *C. parviloba* Gardn. & Champ. ssp. *puberula* ( Hook. f. & Thoms. ) Kuntze in Verh. Bot. Ver. Brand. 26:148. 1885. Type: India. Khasia: Nurtung, 1850-10-01, J. D. Hooker & Thomson s. n. ( lectotype, K !; isolectotypes, G !, P ! ); Garhwal, Falconer 7 ( syntype, K ! ).

*C. parviloba* auct. non Gardn. & Champ.: Pei in Sinensis 7:476. 1936, p. p. quoad Y. Tsiang 12116, 12279; Ting in Fl. Reip. Pop. Sin. 28:180. 1980, p. p. quoad pl. boreali-Yunnan.; L. Q. Li in Vasc. Pl. Hengduan Mount. 1:525. 1993; W. T. Wang in Fl. Yunnan. 11:220. 2000, p. p. quoad pl. boreali-Yunnan.

### 短毛铁线莲

**30a. var. *puberula*** Fig. 12:A–C

Woody vine, more or less turning black when drying. Branches shallowly 4–6-sulcate, densely or sparsely puberulous. Leaves bipinnate, with 2–3 pairs of pinnae, sometimes pinnate; leaflets papery, narrowly ovate, ovate, or lanceolate,  $1.7-6 \times 0.8-4$  cm, at apex long acuminate, attenuate, or acuminate, at base broadly cordate, rounded, or subcordate, at margin entire or sparsely dentate or denticulate, adaxially usually sparsely puberulous, abaxially sparsely or densely appressed-puberulous, basal veins abaxially slightly prominent; petioles 3–7 cm long. Cymes axillary, sometimes terminal, 3–7–many-flowered; peduncles 2.5–8.5 cm long; bracts leaflet-like or small, narrowly elliptic, ca. 5 mm long; bracteoles leaflet-like or small, elliptic, 3–10 mm long. Flower 1.4–2.8 (–3.5) cm in diam.; pedicel 1.8–3.5 cm long, densely puberulous. Sepals 4, white, obovate-oblong or oblanceolate-oblong, sometimes narrowly obovate,  $8-14(-16) \times 3-5(-6)$  mm, at apex obtuse or subtruncate, inside glabrous, outside densely puberulous, on margin velutinous. Stamens 6–8 (–11) mm long, glabrous; anthers oblong or narrowly oblong, 0.8–1.2 mm long, at apex obtuse. Ovaries densely puberulous; styles 5–6 (–7) mm long, densely villous. Achenes strongly compressed, flattened, suborbicular or broadly elliptic,  $3-4 \times 2-3$  mm, puberulous, with distinct usually glabrous margins; persistent styles 2–3 cm long, plumose. Fl. Aug. – Oct.



**Fig. 12.** *Clematis puberula* Hook. f. & Thoms. A – C, var. *puberula*. A, flowering branch; B, stamen; (from Clarke 40560A) C, achene (from S. B. Lan 304). D, achene of var. *tenuisepala* (Maxim.) W. T. Wang (from C. C. Li 22). E – G, var. *ganpiniana* (Lévl. & Van.) W. T. Wang. E, flowering branch; F, stamen; (from W. T. Wang & K. Y. Pan 3q) G, achene (from G. H. Yang 59960).

Bhutan, China (W Sichuan, SE Xizang, N Yunnan), India (Garhwal, Assam), N Myanmar, Nepal. On grassy slopes, in bushes or woods; 1000–3000 m.

Additional specimens examined. **China. Sichuan** (四川): Luding (泸定), T. P. Wang 9720, 9886 (PE). **Xizang** (西藏): Dirang Dzong, F. Kingdon Ward 12425 (UPS); Medog (墨脱), B. S. Li & S. Z. Cheng 1721 (PE). **Yunnan** (云南): Gongshan (贡山), C. W. Wang 66932, T. T. Yu 23038, K. M. Feng 7067, 8149 (PE); Bijiang (碧江), H. T. Tsai 58536 (PE); Fugong (福贡), H. T. Tsai 58969 (PE); Lanping (兰坪), H. T. Tsai 56168 (PE); Zhongdian (中甸), T. T. Yu 14934 (PE); Lijiang (丽江), Zhongdian Exped. 62-2185 (PE); Yangbi (漾濞), T. N. Liou 22927 (PE); Binchuan (宾川), T. N. Liou 21625 (PE); Chuxiong (楚雄), M. K. Li 304 (PE); Jingdong (景东), Y. Tsiang 12116, 12279, M. K. Li 408, 535, 2253 (PE); Dongchuan (东川), S. B. Lan 304 (PE). **India.** Garhwal, Strachey & Winterbottom 14 (K); Mussouree, Jameson 777 (K). **Myanmar**, without precise locality, 1892; Abdul Hut s. n. (G). **Nepal.** From Tete to Charsa, Grey-Wilson & Philips 858 (K); between Dana and Ghasa, Tabata et al. 6126 (GH); Rara, Gum, Polunin, Sykes & Williams 3051 (GH, UPS); South of Tukucha, Stainton, Sykes & Williams 7708 (UPS).

**30b.** var. *tenuisepala* (Maxim.) W. T. Wang in Acta Phytotax. Sin. 38(5): 406. 2000; W. T. Wang & Barth. in Fl. China 6: 353. 2001. — *C. brevicaudata* DC. var. *tenuisepala* Maxim. in Acta Hort. Petrop. 11: 9. 1890; Hand.-Mazz. in Acta Hort. Gotob. 13: 216. 1939; Ding et al., in Fl. Henan. 1: 453. 1981. — *C. ganpiniana* (Lévl. & Van.) Tamura var. *tenuisepala* (Maxim.) Ting in Fl. Reip. Pop. Sin. 28: 188, pl. 58. 1980; Anonymous in Fl. Jiangsu. 2: 175. 1982; W. T. Wang in Fl. Guangxi 1: 290. 1991; Z. H. Lin in Fl. Zhejiang 2: 290. 1992; Y. Z. Ling et al. in Fl. Shanxi. 1: 642. 1992; M. Johnson, Klematis 444. 1997; J. Q. Fu in Fl. Loe.-Plat. Sin. 1: 450. 2000; Grey-Wils., Clematis 37. 2000. Type: China. Gansu (甘肃): near Wen Xian (文县), Fengshanling, 1885-09-09, Potanin s. n. (holotype, LE!).

### 毛果扬子铁线莲 Fig. 12:D

This variety differs from var. *puberula* in the leaflets and sepals being abaxially sparsely puberulous or subglabrous.

China (S Gansu, N Guangxi, S Henan, Hubei, NE Jiangsu, S Shaanxi, Shandong, S Shanxi, SE Sichuan, NE Yunnan, Zhejiang). On grassy slopes, in woods, or by streams; 250–1000 m.

Additional specimens examined. **China. Gansu** (甘肃): Tao River basin, Rock 13137 (K); Tianshui (天水), Z. W. Zhang 253 (WUK). **Guangxi** (广西): Guilin (桂林), Guangxi Exped. 53-3793 (PE). **Henan** (河南): Jigongshan (鸡公山), A. J. Li et al. 95 (PE); Song Xian (嵩县), Henan Exped. 59-35189 (PE); Yiyang (宜阳), Xinxiang Norm. Coll. Exped. 23104A (PE); Luoning (洛宁), C. C. Li 22 (PE); Lingbao (灵宝), Henan Exped. 59-14278 (PE); Lin Xian (林县), K. T. Fu 19069 (WUK). **Hubei** (湖北): Yichang (宜昌), Henry 2347 (K, P), 2764 (G), 4338 (G, LE), 4340, 4361 (GH, K); Xingshan (兴山), T. P. Wang 11988 (PE); Laifeng (来凤), H. J. Li 7087 (PE); Fang Xian (房县), K. M. Liou 8977 (PE). **Jiangsu** (江苏): Yuntaishan (云台山). F. X. Liu 10874 (PE). **Shaanxi** (陕西): Pingli (平利), P. Y. Li 7595 (WUK); Ziyang (紫阳), P. Y. Li 7181 (WUK); Hanzhong (汉中), J. W. Wang 81 (PE); Mian Xian (勉县), K. T. Fu 5530, 5617 (PE); Shanyang (山阳), T. P. Wang 16518 (PE); Huashan (华山), Z. Y. Zhang 18446 (WUK);

Huayin (华阴), H. J. Wang 76 (WUK); Lantian (蓝田), G. X. Su 253 (WUK); Zhongnan-shan (终南山), Y. Y. Pai 1014 (PE); Taibaishan (太白山), T. P. Wang 1953 (PE); Mei Xian (眉县), T. N. Liou & P. C. Tsoong 49 (PE); Xitaibaishan (西太白山), K. T. Fu 10484 (WUK); Baoji (宝鸡), K. T. Fu 13824 (WUK). **Shandong** (山东): Qufu (曲阜), ?34 (PE); Jinan (济南), C. Y. Chiao 3054 (GH, K, LE, PE); Boshan (博山), C. Y. Chiao 3145 (K, LE). **Shanxi** (山西): Jincheng (晋城), S. Y. Bao 1637 (PE); Ruicheng (芮城), S. Y. Bao 1536 (PE). **Sichuan** (四川): Xiushan (秀山), Z. C. Zhao 88-2090 (PE); without precise locality, E. H. Wilson 1723 (K). **Yunnan** (云南): Dongchuan (东川), S. B. Lan 304 (PE). **Zhejiang** (浙江): Hangzhou (杭州), Hangzhou Bot. Gard. Exped. 58-910 (PE); Tianmushan (天目山), Hangzhou Bot. Gard. Exped. 31277 (PE).

**30c.** var. *subsericea* (Rehd. & Wils.) W. T. Wang in Acta Phytotax. Sin. 38(5): 407. 2000; W. T. Wang & Barth. in Fl. China 6: 353. 2001. —— *C. brevicaudata* DC. var. *subsericea* Rehd. & Wils. in Sarg. Pl. Wils. 1: 341. 1913; Hand.-Mazz. in Acta Hort. Gotob. 13: 216. 1939. —— *C. ganpiniana* (Lévl. & Van.) Tamura var. *subsericea* (Rehd. & Wils.) Ting in Fl. Reip. Pop. Sin. 28: 187. 1980. Type: China. Sichuan (四川): Yaan (雅安), 1908-09, E. H. Wilson 2479 (holotype, GH!).

### 毛叶扬子铁线莲

This variety differs from var. *puberula* in its glabrous ovaries and leaflets abaxially more or less densely sericeous-puberulous.

China (W Sichan). On grassy slopes or in bushes; 300-2550 m.

Additional specimens examined. **China. Sichuan** (四川): Kangding (康定), K. C. Kuan, W. T. Wang et al. 91 (PE); Yajiang (雅江), Z. P. Huang et al. 647 (PE); Jinchuan (金川), X. S. Zhang 6594, 6597 (PE); Baoxing (宝兴), Z. P. Song 39250, K. C. Kuan, W. T. Wang et al. 2819 (PE); Mao Xian (茂县), Sichuan Exped. 75-8644 (PE).

**30d.** var. *ganpiniana* (Lévl. & Van.) W. T. Wang in Acta Phytotax. Sin. 38(5): 407. 2000; W. T. Wang & Barth. in Fl. China 6: 353. 2001. —— *C. vitalba* L. var. *ganpiniana* Lévl. & Van. in Bull. Acad. Intern. Geogr. Bot. 11(152): 167. 1902. —— *C. parviloba* Gardn. & Champ. var. *ganpiniana* (Lévl. & Van.) Rehd. in J. Arn. Arb. 17: 319. 1936. —— *C. brevicaudata* DC. var. *ganpiniana* (Lévl. & Van.) Hand.-Mazz. in Acta Hort. Gotob. 13: 215. 1939; Lauener & Green in Not. R. Bot. Gard. Edinb. 23: 580. 1961; Anonymous in Fl. Hu-peh. 1: 373, fig. 528. 1976. —— *C. ganpiniana* (Lévl. & Van.) Tamura in Acta Phytotax. Geobot. 15(1): 17. 1953; Ting in Fl. Reip. Pop. Sin. 28: 184, pl. 57. 1980; M. C. Chang in Iconogr. Corm. Sin. Suppl. 1: 468, fig. 8628. 1982; C. Y. Wu, Ind. Fl. Yunnan. 1: 109. 1984; Lin & Zhao in Fl. Fujian 2: 29. 1985; W. T. Wang in Acta Bot. Yunnan. 8(3): 269. 1986; Y. K. Li in Fl. Guizhou. 3: 61. 1986; X. W. Wang in Fl. Anhui 2: 340. 1986; W. T. Wang in Fl. Guangxi 1: 290. 1991; Z. H. Lin in Fl. Zhejiang 2: 289. 1992; L. Q. Li in Vasc. Pl. Hengduan Mount. 1: 525. 1993; M. Johnson, Clematis 443. 1997; Grey-Wils., Clematis 37. 2000. Type: China. Guizhou (贵州): Ganpin, 1897-08-04, Martin & Bodinier 1882 (lectotypes, E!; isolectotype, P!); same locality, Martin & Bodinier 1788, 1883 (syntypes, E!, P!).

*C. parviloba* var. *glabrescens* Finet & Gagnep. in Bull. Soc. Bot. France 50: 834. 1903; Lévl., Fl. Kouy-Tcheou 333. 1915. Syntypes: China. Hubei (湖北): Henry 4338 (P!). Sichuan (四川): Farges s. n. (P!). Guizhou (贵州): Martin & Bodinier 1788, Seguin & Bodinier 1992 (P!). Yunnan (云南): Ducloux 618 (P!).

*C. brevicaudata* var. *lissocarpa* Rehd. & Wils. in Sarg., Pl. Wils. 1:340. 1913; Rehd. in J. Arn. Arb. 8:106. 1927. Type: China. Jiangxi (江西): Lushan (庐山), E. H. Wilson 1552 (holotype, GH!; isotype, K!). 1551, 1553 (paratypes, GH!, K!). Hubei (湖北): Henry 6462 (paratype, GH!).

*C. brevicaudata* var. *leiophylla* Hand.-Mazz. in Acta Hort. Gotob. 13:216. 1939. Type China. Sichuan (四川): Chengkou (城口), Farges s. n. (holotype, P!).

*C. pierotii* auct. non Miq. : Finet & Gagnep. in Bull. Soc. Bot. France 50 :524. 1903 , p. 266. quoad pl. Sinen.

扬子铁线莲 Fig. 12 : E - G

This variety differs from var. *puberula* in its glabrous ovaries and achenes and leaflets abaxially sparsely puberulous or subglabrous.

China (S Anhui, N Fujian, N Guangdong, N Guangxi, Guizhou, S Henan, Hubei, Hunan, Jiangxi, S Shaanxi, Sichuan, E Xizang, C & N Yunnan, N Zhejiang). On slopes, in bushes or in woods: 400–3300 m.

Additional specimens examined. **China. Anhui** (安徽): Huangshan (黄山), R. C. Ching 3070 (GH, K), W. C. Cheng 4208 (PE); She Xian (歙县), X. P. Zhang 1635 (ANUB); Qimen (祁门), R. C. Ching 3148 (GH); Jinzhai (金寨), X. S. Shen 1783 (PE). **Fujian** (福建): Taining (泰宁), M. S. Li 1229 (PE); Chongan (崇安), Wuyi Exped. 79-854 (PE). **Guangdong** (广东): Lechang (乐昌), W. T. Tsang 20891 (PE). **Guangxi** (广西): He Xian (贺县), S. Q. Zhong 62771 (PE); Pingle (平乐), S. Q. Zhong 62880 (PE); Yangshuo (阳朔), R. H. Shan 1143, W. T. Wang & K. Y. Pan 37 (PE); Guilin (桂林), W. T. Tsang 28370 (PE). **Guizhou** (贵州): Xingyi (兴义), Anshun Exped. 56-628 (PE); Anlong (安龙), Y. Tsiang 7393 (K, PE); Luodian (罗甸), J. M. Chen 361 (GZTM); Anshun (安顺), Anshun Exped. 59-1934 (PE); Gan-chouen, Cavalerie 7869 (K); Pinfa (平伐), Cavalerie 433 (P); Kaili (凯里), Guizhou Exped. 59-3847 (PE); Dushan (独山), Y. Tsiang 6767 (PE); Qingzhen (清镇), Sichuan-Guizhou Exped. 55-1985 (PE); Bijie (毕节), P. H. Yu 669 (PE); Dafang (大方), Bijie Exped. 59-876 (PE); Weng 'an (瓮安), Libo Exped. 59-2366 (PE). **Fanjingshan** (梵净山), Bartholomev et al. 1169 (GH). **Henan** (河南): Yichuan (伊川), H. M. Shi 22822 (HEAC). **Hubei** (湖北): Xianfeng (咸丰), Y. M. Zhang 6858 (PE); Yichang (宜昌), Henry 6462 (P). **Hunan** (湖南): Yizhang (宜章), L. H. Liu 1350 (HNNU); Xining (新宁), Ziyunshan Exped. 84-1998 (PE); Wugang (武冈), Handel-Mazzetti 12508 (GH); P. C. Tsoong 1254 (PE); Yongshun (永顺), Wulingshan Exped. 88-1140 (PE); Shimen (石门), Hupingshan Exped. A86 (PE); Pingjiang (平江), Y. G. Li 856006 (HUTM). **Jiangxi** (江西): Shangyou (上犹), Jiangxi Exped. 531 (PE); Wugongshan (武功山), Jiangxi Exped. 54-1705 (PE); Tonggu (铜鼓), S. S. Lai 3688 (PE); Wuning (武宁), S. S. Lai 3095 (PE); Lushan (庐山), H. H. Hu 1389 (GH), Y. G. Xiong 9858 (PE); Wuyuan (婺源), R. C. Ching 3233 (GH, K); Qianshan (铅山), C. P. Jian et al. 400957 (PE). **Sichuan** (四川): Butuo (布拖), Liangshan Exped. 59-5712 (PE); Kangding (康定), W. K. Hu & C. He 11053 (WUK); Emeishan (峨眉山), W. P. Fang 17514 (PE), F. T. Wang 23282 (P, PE); Baoxing (宝兴), K. L. Chu 3676 (BM, K, PE); Qionglai (邛崃), Z. P. Huang et al. 2103 (WUK); Xiaojin (小金), Potanin s. n. (LE); Jinchuan (金川), X. S. Zhang 6507, X. Li 75615 78591 (PE); Heishui (黑水), X. Li 73478 (PE); Barkam (马尔康), X. Li 72624 (PE); Li Xian (理县), Q. S. Zhao 232 (K, PE, UPS); Pingwu (平武), W. P. Fang 4207 (P, PE).

Chengkou (城口), Farges 2 (K, LE); Wushan (巫山), G. H. Yang 59860 (PE); Nanchuan (南川), F. T. Wang 10235, G. F. Li 63852, 64174 (PE). **Xizang** (西藏): Yigong (易贡), B. S. Li et al. 6487 (PE); Zayü (察隅), C. W. Wang 66381 (PE). **Yunnan** (云南): Dêqên (德钦), C. W. Wang 69288, T. T. Yü 10615 (PE); Jianchuan (剑川), Forrest 22263 (K); Lanping (兰坪), H. T. Tsai 5609 (PE); Lijiang (丽江), R. C. Ching 21553 (PE); Heqing (鹤庆), R. C. Ching 24336 (PE); Kunming (昆明), T. N. Liou 14096 (PE); Ma-hong, Maire 3376 (LE); Pingbian (屏边), H. T. Tsai 62477 (PE); Wenshan (文山), H. T. Tsai 51598 (P). **Zhejiang** (浙江): Kaihua (开化), J. X. Wang 1812 (PE); Anji (安吉), M. C. Liu 2 (ZJFC).

Subsect. 2. **Crassifoliae** (Tamura) Tamura in Sci. Rep. Osaka Univ. 16(2):33. 1967; M. C. Chang in Fl. Reip. Pop. Sin. 28:178. 1980. — Subsect. *Rectae* ser. *Crassifoliae* Tamura in Sci. Rep. Osaka Univ. 4:53. 1955. — Sect. *Flammula* subsect. *Crassifoliae* (Tamura) Tamura in Acta Phytotax. Geobot. 38:43. 1987; et in Heipko, Engler's Nat. Pflanzenfam., ed. 2, 17a (4):382. 1985. — Sect. *Flammula* subsect. *Crassifoliae* (Tamura) M. Johnson, Klematis 604. 1997; Grey-Wils., Clematis 114. 2000. Type: *C. crassifolia* Benth.

Woody vines. Seedling leaves unknown. Leaves ternate; leaflets subcoriaceous, at margin entire. Flowers medium-sized, in many-flowered cymes arising from axils of hornotinous branch. Sepals 4, covered with hairs up to 1 mm long. Filaments rugose; anthers broadly oblong, at apex obtuse. Achenes compressed, but neither flattened and not marginate.

One species, occurring in S China and S Japan.

**31. *Clematis crassifolia* Benth.**, Fl. Hongk. 7. 1861; et in J. Bot. 3:255. 1851; Kuntze in Verh. Bot. Ver. Brand. 26:152. 1885; Forb. & Hemsl. in J. Linn. Soc. Bot. 23:3. 1886; Finet & Gagnep. in Bull. Soc. Bot. France 50:531. 1903; Hayata, Ic. Pl. Formos. 1:17. 1911; Pei in Sinensis 7:472. 1936; Hand.-Mazz. in Acta Hort. Gotob. 13:209. 1939; Chun & How in Acta Phytotax. Sin. 7(1):3. 1958; How & W. T. Wang in Fl. Hainan. 1:307. 1964; Ohwi, Fl. Jap. 443. 1965; T. S. Liu & Hsieh in Fl. Taiwan 2:27. 1976; M. C. Chang in Fl. Reip. Pop. Sin. 28:178, pl. 53. 1980; Tamura in Satake et al., Wild Flow. Jap. 2:73. 1982; S. R. Lin & X. Z. Zhao in Fl. Fujian 2:27. 1985; W. T. Wang in Fl. Guangxi 1:288. 1991; T. Y. Yang & T. C. Huang in Taiwania 40(3):216, fig. 5. 1995; et in Fl. Taiwan, ed. 2, 2:518, pl. 241. 1996; M. Johnson, Klematis 631. 1997; K. M. Liu in Fl. Hunan 2:684. 2000; Grey-Wils., Clematis 114. 2000; W. T. Wang & Barth. in Fl. China 6:353. 2001. Type: China. Hongkong (香港): in a ravine on Mt. Victoria, Wilford 106 (lectotype, K! — T. Y. Yang & T. C. Huang, 1995).

### 厚叶铁线莲 Fig. 13: A – C

Woody vine. Branches shallowly 10–12-sulcate, glabrous. Leaves ternate, glabrous; leaflets subcoriaceous, elliptic, oblong, ovate, or broadly ovate, 5–12 × 2.5–6.5 (–9.5) cm, at apex acuminate or obtuse, at base broadly cuneate or rounded, at margin entire, basal veins flat or abaxially slightly prominent; petioles 5.5–10 cm long. Cymes axillary and terminal, many-flowered, panicle-like; peduncles 3–5 cm long, glabrous; bracts linear or subulate, 5–6 mm long, glabrous or puberulous. Flower 2.4–4 cm in diam.; pedicel 1–2.8 cm long, glabrous. Sepals 4, white or tinged with pinkish, linear-lanceolate or narrowly oblanceolate, 1.2–2.2 × 2–4 mm, at apex attenuate, inside sparsely puberulous, outside subglabrous or puberulous, on margin



**Fig. 13.** A - C, *Clematis crassifolia* Benth. A, flowering branch; B, stamen; C, achene (from Hainan Exped. 55-354); D - F, *C. baominiana* W. T. Wang. D, flowering branch; E, stamen; F, achene (from X. J. Wang & D. S. Jiang 1441).

velutinous. Stamens 5–12 mm long, glabrous; filaments rugose; anthers broadly oblong, broadly elliptic, or oblong, 1.2–2.2 mm long, at apex obtuse. Ovaries glabrescent; styles 8–11 mm long, densely villous. Achenes compressed, ovate or elliptic, 4–6 × ca. 3 mm, pubescent; persistent styles 2.4–4 cm long, plumose. Fl. Dec. to Jan. of the next year.

China (S Fujian, Guangdong, Guangxi, Hainan, Hongkong, S Hunan, Taiwan), S Japan. On slopes, by streams, or in forests; 300–2300 m.

Additional specimens examined. **China. Fujian** (福建): Nanping (南平), G. S. He 577, 1366 (PE). **Guangdong** (广东): Yunfu (云浮), ?10131 (IBSC); Huaiji (怀集), W. T. Tsang 23350 (GH, LE), Y. G. Liu 2935 (PE); Luofushan (罗浮山), N. K. Chun 42301 (IBSC); Conghua (从化), L. Deng 8490 (PE); Xinfeng (新丰), Y. W. Taam 209 (IBSC); Lianping (连平), Mell 67 (GH); Lechang (乐昌), N. K. Chun 42301 (PE). **Guangxi** (广西): Shangsi (上思), W. T. Tsang 23183 (IBK); Dayaoshan (大瑶山), C. Wang 40344 (GH); Quanzhou (全州), Z. Z. Chen 52-693 (IBK). **Hainan** (海南): Jianfengling (尖峰岭), K. S. Chow 78394 (GH, K, PE); Dan Xian (儋县), W. T. Tsang 17193 (WUK); Chengmai (澄迈), W. T. Tsang 744 (WUK). **Hongkong** (香港): Lantou Isl., W. T. Tsang 16498 (PE), S. Y. Hu 12849 (GH, K, PE); without precise locality, R. C. Ching 8553 (NAS), N. K. Chen 40133 (PE). **Taiwan** (台湾): Taibei (台北), H. L. Ho 805 (GH), T. Y. Yang 983 (PE); Nantou (南投), E. H. Wilson 9945 (GH). **Japan**. Kyushu: Yakushima Isl., Togasi 1434 (GH, K, LE, P, US); Tangegeashima Isl., Hatusima 15629, Creech 753 (GH).

Subsect. 3. **Baominianae** (W. T. Wang) W. T. Wang, st. nov. — subsect. *Clematis* ser. *Baominianae* W. T. Wang in Acta Phytotax. Sin. 36(2):157. 1998. Type: *C. baominiana* W. T. Wang.

Woody vines. Seedling leaves unknown. Leaves ternate; leaflets at margin dentate. Flowers large, in axillary, 1-flowered cymes arising from leaf axils of hornotinous branch. Sepals 6, covered with hairs 1.6–3 mm long. Filaments not rugose; anthers oblong, at apex obtuse. Achenes compressed, but neither flattened nor marginate.

One species, endemic to C & E China.

32. **Clematis baominiana** W. T. Wang in Acta Phytotax. Sin. 36(2):157. 1998; K. M. Liu in Fl. Hunan 2:687, fig. 2-536. 2000; Grey-Wils., Clematis 106. 2000; W. T. Wang & Barth. in Fl. China 353. 2001. — *C. villosa* B. M. Yang in Acta Phytotax. Sin. 27(3):230, fig. 1. 1989, non DC. 1818. Type: China. Hunan (湖南): Taojiang (桃江), 1986-05-10, X. J. Wang 8 (holotype, HNTC!).

### 保民铁线莲 Fig. 13:D–F

Woody vine. Stem up to 10 m long, pubescent. Leaves ternate; leaflets papery, rhombic or obovate-elliptic, 3–7 × 1–4 cm, at apex acute, at base broadly cuneate, at margin 1–2-dentate, undivided or indistinctly 2–3-lobulate, on both surfaces pubescent, basal veins abaxially slightly prominent; petioles 4–6 cm long, pubescent. Cymes axillary, 1-flowered; peduncles 3–4 cm long, pubescent; bracts linear, ca. 7 mm long, pubescent. Flower ca. 6 cm in diam.; pedicel 1–1.5 cm long, densely pubescent. Sepals 6, white, linear-lanceolate, ca. 3 × 0.3 cm, at apex attenuate, inside glabrous, outside densely villous (hairs 1.6–3 mm long), on margin velutinous. Stamens ca. 14 mm long, glabrous; anthers oblong, ca. 3 mm long, at apex obtuse. Ovaries pubescent; styles ca. 13 mm long, densely villous in the lower part, densely pubescent in the upper

part. Achenes compressed, ovate, ca.  $5 \times 3.5$  mm, pubescent; persistent styles 2.5–3 cm long, plumose. Fl. May.

China (S Anhui, N Hunan). On slopes or in grassy places by stream; 300 m.

Additional specimens examined. **China. Anhui** (安徽): Qimen (祁门), S. X. Qian 17534 (PE). **Hunan** (湖南): Taojiang (桃江), X. J. Wang & D. S. Jiang 1441 (PE).

(to be continued)

## 铁线莲属威灵仙组修订

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**摘要** 对铁线莲属铁线莲亚属 *Clematis* subgen. *Clematis* 中的欧洲铁线莲 *C. vitalba* L. 演化干的原始群威灵仙组 sect. *Clematis* 进行了全面修订, 确定此组共含有 73 种和 45 变种。写出了威灵仙组的分类学简史及地理分布。对威灵仙组中各亚组的亲缘和主要区别特征以及铁线莲亚属欧洲铁线莲演化干中各群的亲缘关系进行了讨论。将威灵仙组分为 5 个亚组, 写出了分亚组检索表和各亚组的分种检索表, 以及各种植物的形态描述、地理分布、生长环境等, 并附有多幅插图。在 5 亚组中, 欧洲铁线莲亚组(钝萼铁线莲亚组) subsect. *Clematis* 为此组的原始群, 其主要特征: 藤本; 小叶通常革质或纸质, 通常边缘具齿, 有时全缘; 萼片 4, 外面的毛长 1 mm 以下; 花药长圆形、椭圆形或狭长圆形, 稀条形, 药隔顶端不突起, 稀稍突起。此亚组的瘦果两侧扁压, 但多数不扁平, 不具边缘, 只在短毛铁线莲 *C. puberula* Hook. f. & Thoms. 强烈扁压, 扁平, 周围具宽边缘。在铁线莲属中, 除短毛铁线莲外, 特产朝鲜的 *C. brachyura* Maxim. (sect. *Pterocarpa* Tamura) 也具有近似这种进化类型的瘦果。铁线莲组的其他 4 个亚组各含有较进化的特征, 可能均自欧洲铁线莲亚组演化而出: 单种的厚叶铁线莲亚组 subsect. *Crassifoliae* (Tamura) Tamura 为藤本, 小叶革质, 全缘, 很像威灵仙亚组的小叶, 雄蕊花丝皱缩, 花药宽长圆形或长圆形。单种的长毛铁线莲亚组 subsect. *Baominianae* (W. T. Wang) W. T. Wang 为藤本, 小叶纸质, 具齿, 花大, 具 6 枚萼片; 萼片外面的毛长 1.6–3 mm; 花药长圆形。棉团铁线莲亚组 subsect. *Angustifoliae* 的主要特征: 茎直立, 花常具 5–6 枚萼片。威灵仙亚组 subsect. *Rectae* Prantl 的主要特征: 藤本, 稀茎直立, 小叶常革质, 全缘, 稀具齿, 萼片通常 4 枚, 稀较多, 外面的毛长在 1 mm 以下; 花药条形, 有时狭长圆形, 药隔顶端常突起。此亚组的威灵仙系 ser. *Rectae* Prantl 具有进化类型的瘦果, 其瘦果强烈扁压, 扁平, 有膨胀的框状边缘。主要分类学处理为 (1) 疏被针叶铁线莲 *C. lancifolia* Bur. & Franch.、准噶尔铁线莲 *C. songarica* Bunge、*C. ispanica* Boiss.、银叶铁线莲 *C. delavayi* Franch. 和 *C. phlebantha* Williams 5 种过去被 Tamura 和其他学者与灌木铁线莲 *C. fruticosa* Turcz. 等同置于灌木铁线莲组 sect. *Fruticella* Tamura 中, 但这 5 种的花构造(萼片水平方向开展, 白色, 边缘不展宽, 花丝条形或狭条形)与灌木铁线莲(萼片斜上方开展, 黄色, 在花开放后边缘展宽成狭翅, 花丝较宽, 条状披针形)不同, 而与棉团铁线莲 *C. hexapetala* Pall. 的花构造相似。据此, 本修订将此 5 种从灌木铁线莲组移到威灵仙组的棉团铁线莲亚组 subsect. *Angustifoliae* Tamura 中。(2) 在欧洲铁线莲群 *C. vitalba* group 与威灵仙群 *C. flammula* group 之间有不少过渡类型, 因此, 这两个群不易区分。根据这种情况, 本修订将这两个群作为亚组处理, 同置于威灵仙组 sect. *Clematis* 中, 而未采用 Tamura 和 Grey-Wilson 将这两个群分别置于两个亚属中, 以及 Johnson 将这两个群分别置于两个组中的分类学处理。描述了 2 新系、6 新种和 1 新变种, 建立了 5 个新等级。

**关键词** 铁线莲属; 威灵仙组; 分类学修订